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ABSTRACT

One of a series of eleven curriculum manuals which cover the four transportation topics of public transportation, transportation and the environment, transportation safety, and bicycles for elementary, secondary, and adult levels, this manual covers the transportation safety topic for grades 6-9. The manual contains forty-seven learning activities grouped into ten mini-units. Each mini-unit consists of a lesson plan component, which provides a suggested sequence of learning activities, and an individual learning activities component, which describes in detail how to implement each exercise. The first mini-unit provides a survey of issues related to transportation safety; the rest are as follows: understanding driving habits, learning about safety belts, drinking and driving, buying a car, learning about pedestrian safety, learning how to be safe while boating, learning about emergency vehicles, being safe on various vehicles, and promoting transportation safety through consumer/citizen action. A final section offers additional activities that may be used to evaluate or supplement evaluation of an activity or mini-unit. Also included are lists of references for further study resources and masters for reproduction of role profiles, game boards, maps, and other distributable materials. (A curriculum guide, CE 014 028, is also available for use with the manuals.) (TA)

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GETTING THERE!

MINI-UNITS AND LEARNING ACTIVITIES ON TRANSPORTATION SAFETY

for Grades 6 through 9

by

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Abt Associates Inc.
Cambridge, Massachusetts

March, 1977

U S DEPARTMENT OF HEALTH
EDUCATION & WELFARE
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SPIRIT MASTERS

FOREWORD

TEACHING TRANSPORTATION: AN OVERVIEW

> Nearly everything Americans do, from mailing a postcard to walking on the moon, depends on transportation. Transportation is essential for the supply of food, clothing and shelter, for national defense and employment, for education and recreation, for the international exchange of goods and services.*

Although every American is provided with the necessities and amenities of modern life through an intricate freight-carrying network, we think of transportation most readily in terms of moving people, not products, and for good reason. Millions of us commute to work everyday by car, bus, train, or subway. Moreover, 21 million youngsters travel on school buses every day. Americans use a variety of transportation modes for other purposes, including shopping, recreation, tourism, and moving. The average family changes residence once every five years and makes use of one of the many thousands of for-hire companies that provide domestic surface transportation. In addition, Americans travel more than 1.7 trillion miles by passenger cars or trucks every year, while AMTRAK's 250 trains cover 26,000 miles and service 484 communities with more than 7 million people annually using the New York to Washington run alone. There are also 950 intercity bus companies whose 20,600 vehicles travel 1.1 billion miles each year, while commercial aircraft transport over 210 million passengers annually.

Americans are highly dependent on transportation services for recreation purposes, too. Not only are vehicles used to get to places of entertainment, many vehicles are themselves forms of recreation. For example, there are approximately 7.3 million registered boats in the country, not counting rowboats and canoes. Seven and one-half million motors homes, truck campers, and travel and camping trailers are on the roads. Snowmobiles, dune buggies, and home-built vehicles have become widespread in the past few years.

Americans also relax on two-wheeled vehicles: there are 100 million bicycles and nearly five million motorcycles in the country, many of which are used for commuting as well as recreation.

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*John Burby, *The Great American Motion Sickness*, (Little, Brown and Co., Boston: 1971), page 3.

The most frequently used form of transportation in the nation, however, is walking. We sometimes forget that pedestrians utilize the single most common mode of travel.

Finally, the overwhelming importance of transportation in our lives must be assessed not only in terms of movement of goods and people, but also in relation to the millions of jobs transportation provides. Transportation facilities and vehicles require manufacturers, builders, operators, and mechanics, while they also create thousands of employment opportunities in related industries, from foundries which produce steel for vehicles to insurance companies which provide automobile insurance to health care systems which treat travel-related injuries.

For all these reasons it is important for students to become aware of transportation as it affects their lives, to learn to be wise purchasers and users of transportation goods and services, and to develop skills to promote constructive use and appropriate expansion of all forms of transportation in their communities and beyond.

In particular, consumers should become informed about (1) improving and using public transportation, (2) harmonizing the environment and transportation, (3) understanding transportation safety, and (4) perceiving the importance of bicycling. By examining these four major topics, students will learn, for example: to identify the best methods for commuting to school and work; to travel, when possible, in ways which minimize adverse transportation effects on the environment; and to purchase and use transportation vehicles and facilities with maximum safety.

CURRICULUM MATERIALS AVAILABLE

This Manual is one in a series of volumes which treat at different grade levels the four transportation topics of Public Transportation, Transportation and the Environment, Transportation Safety, and Bicycles. These volumes were developed by Abt Associates Inc. under contract to the U.S. Department of Transportation, Office of Consumer Affairs. The following eleven Manuals and curriculum guide on transportation consumer education are currently available:

- TRAVEL ON! Mini-units and Learning Activities on Transportation for Grades K-3
- TRAVEL ON! Mini-units and Learning Activities on Transportation for Grades 4-6
- Transportation Consumer Education for Adults: Mini-units and Learning Activities
- PEDAL ON! Mini-units and Learning Activities on Bicycling for Grades 6-9
- PEDAL ON! Mini-units and Learning Activities on Bicycling for Grades 9-12
- RIDE ON! Mini-units and Learning Activities on Public Transportation for Grades 6-9
- RIDE ON! Mini-units and Learning Activities on Public Transportation for Grades 9-12
- GETTING THERE! Mini-units and Learning Activities on Transportation Safety for Grades 6-9
- GETTING THERE! Mini-units and Learning Activities on Transportation Safety for Grades 9-12
- Transportation and the Environment in Harmony: Mini-units and Learning Activities for Grades 6-9
- Transportation and the Environment in Harmony: Mini-units and Learning Activities for Grades 9-12
- Transportation Consumer Education: A Curriculum Guide for Grades K-12 and Adult

These volumes may be ordered from:

Abt Publications
55 Wheeler Street
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The Federal Railroad Administration (FRA)

The National Highway Traffic Safety Administration (NHTSA)

The Office of Education, Bureau of Occupational Education (HEW/OE)

The United States Coast Guard

The Urban Mass Transportation Administration (UMTA)

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We are also grateful to Harris Meacham (St. Louis, Missouri) and Roger Perna (Arlington, Virginia) who tested the Manual in their classes. Many of the activities were helpfully reviewed by Harold Darnall, who teaches in St. Louis and by Terry Johnson, who teaches in Woodstock, Vermont.

Despite the considerable assistance from these sources, only the authors are in any way responsible for errors, approaches, and biases in the final product.

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INTRODUCTION

WHAT'S IN THE MANUAL

Getting There! for grades 6 through 9 contains 47 learning activities grouped into 10 mini-units. Each unit has two components:

1. *A lesson plan* which provides a suggested day-by-day sequence of learning activities and goals
2. *Individual learning activities* which describe in detail how to implement the exercises suggested in the lesson plan

Eleven spirit masters are also provided at the end of the Manual for use with eight different activities.

The first mini-unit provides a survey of issues related to transportation safety, while the rest focus on a specific transportation safety issue. The eight activities in the survey mini-unit all reappear in subsequent units. Brief descriptions of all the activities in the Manual are provided on pages 14, 15, and 16.

A final section of activities is called "Assessment Activities." This section offers additional activities that may be used to evaluate or supplement your evaluation of an activity or an entire mini-unit.

Also included at the end of the volume is a bibliography of suggested teacher and student materials.

HOW TO USE THE MANUAL

This Manual is designed as a resource volume of activities and background materials to be used in ways which are compatible with your needs and those of your students.

The mini-units and individual learning activities may be integrated into your curriculum at many points and to meet many purposes.

- In *consumer education and home economics,* the activities find a natural home in view of their treatment of transportation issues from the perspective of the consumer.
- In *social studies,* the activities enhance learning about one's community. They aid in understanding the importance of citizen participation in government, and they broaden the study of transportation itself.
- *Health and safety units* are obvious points of entree because of the entire Manual's concern with safety issues.
- *Language arts* skills are integral to all the mini-units, since the activities are designed to develop and reinforce students' capacities to listen, speak, write, observe, and analyze.

You will find that the introduction to each mini-unit sums up the rationale for teaching that topic in your classroom. After reading these mini-unit instructions, you will have the background for deciding which mini-unit or mini-units you will teach. In examining the mini-units, you should feel free to make substitutions or deletions in the mini-units and in the learning activities whenever this is necessary to meet your teaching objectives.

Here are several methods for adapting the mini-units and learning activities to teach transportation safety in your classroom.

You can read the lesson plans for all mini-units and *select one or more lesson plans* to integrate into your course. Having made your selection, read the detailed activity descriptions which follow the lesson plans for specific instructions on implementing the activities in the mini-unit or units you have chosen. This method of using the Manual is most appropriate if you wish to concentrate in some depth on one or more specific aspects of transportation safety.

If you prefer to provide your students with a survey of issues related to transportation safety touching on several aspects of the field, you can *implement the first mini-unit* which provides just this type of overview. For your own information, you may wish to skim the lesson plans of the other mini-units for additional materials that will enrich your survey presentation.

You can *develop your own mini-unit* consisting of activities that you select from several mini-units in the Manual.* If you wish to do this, read the capsule descriptions of each activity provided on the chart on the following pages. This chart will show you, at a glance, the teaching method and content of each learning activity offered in the Manual.

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*You can also have your students leaf through the activities and select ones they would like to pursue individually or in small study groups.

MINI-UNITS AND ACTIVITIES

Mini-unit 1

Surveying the field of transportation safety

Activity	*Activity Description*	*Class Time (periods)*
1	Students identify and then discuss common driving habits that are dangerous.	½-1
2	Students ask their parents why they do or do not wear safety belts.	1
3	Students learn the facts about drinking and driving and discuss them.	1
4	Students discuss the importance which safety considerations should have when buying a vehicle primarily for another purpose.	1
5	Students discuss what restrictions they would set for their children on walking and playing safely.	1
6	Through discussion and research, students learn how to avoid commuting accidents.	1
7	Class discusses nature of emergency vehicles.	½-1
8	Students read brochures, instructional materials and other promotional and descriptive literature about recreational vehicles available from dealers and manufacturers.	1-2
	Mini-unit 2 Understanding driving habits	
9	Students identify and then discuss common driving habits that are dangerous.	½-1
10	Students role play drivers and passengers in situations that involve safe (or unsafe) driving habits.	1
11	Students perform science experiments which illustrate automobile driving safety considerations and issues.	1-2
12	Students observe safe and dangerous practices of people with whom they travel, keep a log of their observations, and discuss their observations.	1-2
13	Students act out the parts in the script of "Fleming vs. Rondo--A Hearing." Without the script they complete the hearing and come to a conclusion.	1½-2
	Mini-unit 3 Learning about safety belts	
14	Students ask their parents why they do (or do not) wear safety belts.	1
15	Class discusses how useful safety belts are in reducing injuries and fatalities in automobile accidents.	1-2
16	Students answer "Dear Abby" letters from classmates on safety belt problems and implement a plan to persuade a friend or relative to use safety belts.	1-2
	Mini-unit 4 Drinking and driving	
17	Students learn the facts about drinking and driving and discuss them.	1
18	Students discuss best course(s) of action if a friend or relative is about to ride with a driver who has been drinking excessively.	1-1½
19	Students role play situation in which a friend who has been drinking excessively is about to drive.	1
	Mini-unit 5 Buying a car	
20	Students discuss the safety considerations to keep in mind when buying a new or used automobile.	½-1
21	Students discuss the importance which safety considerations should have when buying a vehicle primarily for another purpose.	1
22	Students discuss embarrassment at carefully examining an automobile for safety features before purchasing it.	½-1
23	Students analyze automobile advertisements and discuss why safety considerations are not usually included in the sales "pitch."	1

MINI-UNITS AND ACTIVITIES (CONTD.)

Mini-unit 6

Learning about pedestrian safety

Activity #	Activity Description	Class Time (periods)
24	Students identify pedestrian hazards and formulate appropriate community countermeasures to enhance pedestrian safety.	1½-2
25	Students explore ways to cope with pressures to walk and play unsafely by responding to hypothetical letters from various age students in situations of conflict about walking and playing.	1
26	Students discuss what restrictions they would set for their children on walking and playing safely.	1
27	Students evaluate a pedestrian accident and determine the causes and responsibility.	1-2
	Mini-unit 7 **Learning how to be safe while boating**	
28	Through discussion and research, students learn how to avoid common boating accidents.	1
29	Students collect, look at, and handle various items that a boat is required to have or that it should have as optional items.	1
30	Students role play a family involved in a boating incident.	1
31	Students read the beginning of a story about peer pressure and boating safety. Students supply the ending themselves.	1
32	Students and teacher discuss why fueling a boat is hazardous and what steps need to be taken to make it a safe procedure.	1
	Mini-unit 8 **Learning about emergency vehicles**	
33	Class discusses the nature of emergency vehicles	½-1
34	Students determine the time needed for an emergency vehicle to reach a given point in their community.	2
35	Students discuss actions which citizens can and should take to facilitate the provision of emergency care by operators of emergency vehicles.	1-2
	Mini-unit 9 **Being safe on various vehicles**	
36	Students singly or in groups research what travelers should do and not do in order to be safe on airplanes, trains, buses, and subways.	1-2
37	Students take field trips to railroad crossings to evaluate precautions they and others should take regarding rail safety.	½-1
38	Students discuss bicycle safety.	½-1
39	Students read brochures, instructional materials, and other promotional and descriptive literature about recreational vehicles available from dealers and manufacturers.	1-2
40	Students role play a youngster trying to persuade a parent to buy him or her a mini-bike.	½-1
	Mini-unit 10 **Promoting transportation safety through consumer/citizen action**	
41	Class discusses the merits of different types of personal, social, and political actions citizens and citizen groups can take to promote automobile safety.	1½-2
42	Students role play funding agencies discussing priorities for financing different types of community safety programs.	½-2

MINI-UNITS AND ACTIVITIES (CONTD.)

Mini-unit 11

Doing supplementary research on transportation safety

Activity #	*Activity Description*	*Class Time (periods)*
43	Students discuss what types of persons might be most inclined or resistant to wearing safety belts. They then poll these people to test their theories.	1½-2
44	Students question automobile mechanics concerning regular maintenance that car owners themselves can perform or should have garages perform in order to keep their car running safely.	2
45	Students research the attitudes of automobile drivers and pedestrians toward each other.	2
46	Students examine official (Coast Guard) tables on boating accidents and interpret them, making use of graphs, charts, and written explanations.	1-1½
47	Students identify the emergency services available in their community and the reason for which each is used.	1
	Assessment activities	
48	Students answer questions about their interests and concerns in the matter of transportation safety.	½-1
49	Students answer questions about the course.	½-1
50	Students answer questions on transportation safety.	½-1

WHY TEACH ABOUT TRANSPORTATION SAFETY?

The Problems

The *overview* at the beginning of this Manual has already pointed out that travel and transportation play a tremendously important role in the lives of Americans, as all of us drive and walk almost every day, and as we frequently ride buses, trains, planes, and boats or ride around on recreational vehicles. Most of that travel is safe, speedy, and pleasant. But when millions of people travel billions of miles, it is not surprising that accidents do happen. Greater safety can be achieved if the persons who travel--that is, all of us--become better informed about transportation services, the different modes of transportation, the special advantages of some, the special dangers of others, and the things that can be done to improve our safety while we travel.

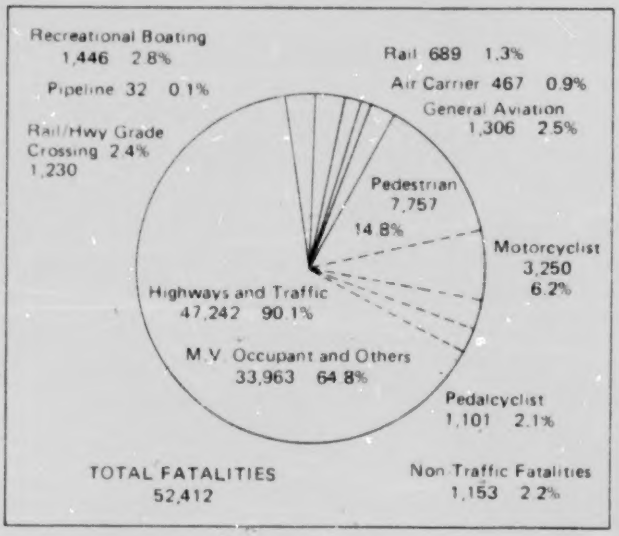
The safest way to travel is to walk. When we walk we control where we go, when we go, how fast we go or if we go at all. Yet even pedestrians have accidents. Somewhere around 300,000 to 400,000 pedestrian accidents occur each year, with 8,000 to 9,000 fatalities.

Americans drive a staggering number of miles each year. The safety record of American drivers is good: there is only one traffic fatality for every 25 million miles driven. Yet the record could be even better, and we should work to reduce the number of traffic fatalities from 50,000 each year to a lower number.

Travel for vacation and recreation should be enjoyable and safe--and most of it is. Few things are more tragic, however, than a recreational trip that is marked by an injury or even a death. Accidents do happen: in 1974 there were, for example, more than 1,400 fatalities from boating and over 1,000 fatalities even from bicycling.

The following chart, adapted from *U.S. Transportation Information Report*, presents the total figures and relative percentages of transportation fatalities for 1974:

TRANSPORTATION FATALITIES: 1974



The Solutions

Federal, state, and local governments must promote transportation safety by providing assistance for planning, development, and financing of improved transportation vehicles and facilities. They must enact legislation that will encourage the manufacturers of vehicles to develop the safest possible vehicles and stimulate the public to engage in safe travel practices.

Local transit authorities--public tranportation companies, taxi companies, ferry agencies--must provide maximum safety provisions for their customers.

Citizens and consumers must be careful. They should use different modes of transportation with full awareness of their dangers and what should be done to minimize these dangers, purchase vehicles that are safe to operate and maintain them in proper operating condition, persuade other people to travel safely, and participate in transportation planning to ensure that safety needs are adequately considered in the development and servicing of vehicles and transportation facilities.

Teachers must guide students to a better understanding of the dangers involved in all kinds of travel and of ways to minimize or prevent them. Transportation consumer education can offer the student a unique opportunity to develop awareness and skills essential to acquire responsible transportation safety in the community.

This Manual focuses on teaching transportation safety by developing consumer skills that are particularly appropriate to grades 6 through 9. The learning activities are designed to

- Make students aware of how to be safe in all modes of travel
- Introduce students to many of the nonrational considerations which result in dangerous travel behaviors, including peer pressure and thrill seeking
- Encourage students to use safety belts and urge others to do likewise
- Acquaint students with the dangers that drinking creates for drivers and their passengers
- Prepare students to buy safe cars by teaching them consumer buying skills
- Point out to students the special hazards that pedestrians face when they encounter vehicles
- Teach students how to be safe while boating or engaging in other recreational travel
- Develop skills in making use of emergency vehicles that are available in the local community and in facilitating the tasks of these vehicles while travelling to or from an emergency
- Develop students' consciousness of the social and political factors involved in the passage of safety legislation and the construction of safe vehicles and transportation facilities
- Motivate students to encourage other people to engage in safe travel practices

MINI-UNITS
AND
LEARNING ACTIVITIES

MINI-UNIT 1

SURVEYING THE FIELD OF TRANSPORTATION SAFETY

Note: The activities in this mini-unit are all selected from the units that follow.

This first mini-unit is designed for those of you who may not have sufficient time to use all or even most of the in-depth units which follow. If nevertheless you would like to expose your students to the various aspects of transportation safety, then this unit provides a good general overview of the field. Of course, you may also use this survey unit as an introduction and then follow it by one or more of the following mini-units.

You may, however, prefer to build your own survey unit with some other activities included in this volume. By browsing through the activities in the other mini-units you may find those activities that are particularly pertinent for your class and your teaching style.

Our survey unit deals with eight different topics:

- Dangerous driving habits
- Safety belts, particularly why so many people refuse to wear them
- Driving and drinking
- Buying an automobile with safety in mind
- How to be safe while walking
- Safety on the water, while boating
- The services provided by emergency vehicles
- Recreational vehicles

Even this wide array doesn't cover all of transportation safety; other topics are touched on in Mini-unit 9 ("Being Safe on Various Vehicles"), Mini-unit 10 ("Promoting Transportation Safety Through Consumer Action"), and Mini-unit 11 ("Doing Supplementary Research on Transportation Safety").

If you have time constraints and feel that this first mini-unit takes up more time than you can give, you may want to use only some of these eight activities. Since each activity is self-contained, you may use as many or as few as seem useful to you. For example, you may omit Activity #3, if you feel that drinking and driving should not be discussed with your students. Or, you may omit Activity #8, because you do not feel that recreational vehicles are an important part of your students' lives.

In this unit, as in the others that follow, you are free to fit the activities to your and your students' needs.

MINI-UNIT 1 LESSON PLAN

Surveying the field of transportation safety

Activity #	*Activities*	*Class Time*
1[a]	DESCRIPTION: Students identify and then discuss common driving habits that are dangerous. GOAL: To know and recognize common dangerous driving habits.	½-1 period
2[b]	DESCRIPTION: Students ask their parents why they do or do not wear safety belts. GOAL: To understand why some people do and some do not wear safety belts.	1 period
3[c] Spirit Master #4	DESCRIPTION: Students learn the facts about drinking and driving and discuss them. GOAL: To understand how alcohol affects people and makes driving more dangerous for them.	1 period
4[d]	DESCRIPTION: Students discuss the importance which safety considerations should have when buying a vehicle primarily for another purpose. GOAL: To understand the different reasons which people have for buying cars.	1 period

[a] Also appears in Mini-unit 2.

[b] Also appears in Mini-unit 3.

[c] Also appears in Mini-unit 4.

[d] Also appears in Mini-unit 5.

MINI-UNIT 1 LESSON PLAN (CONTD.)

Surveying the field of transportation safety

Activity #	*Activities*	*Class Time*
5[e] Spirit Master #6	DESCRIPTION: Students discuss what restrictions they would set for their children on walking and playing safely. GOAL: To understand what are reasonable rules of safety for children of different ages.	1 period
6[f]	DESCRIPTION: Through discussion and research, students learn how to avoid common boating accidents. GOAL: Knowledge of proper techniques for boarding, disembarking, loading and unloading a boat and for dealing with emergency situations.	1 period
7[g]	DESCRIPTION: Class discusses nature of emergency vehicles GOAL: Knowledge of different kinds of emergency vehicles and the special duties which each performs will be learned.	½-1 period
8[h]	DESCRIPTION: Students read brochures, instructional materials and other promotional and descriptive literature about recreational vehicles available from dealers and manufacturers. GOAL: To know different kinds of recreational vehicles and their uses and special dangers.	1-2 periods

Total Class Time: 7-9 periods.

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[e] Appears also in Mini-unit 6.

[f] Appears also in Mini-unit 7.

[g] Appears also in Mini-unit 8.

[h] Appears also in Mini-unit 9.

ACTIVITY #1*

Mini-unit Topic: Surveying Transportation Safety **Approximate Class Time:** ½-1 period

Capsule Activity Description: Students identify and then discuss common driving habits that are dangerous.*

Goal:

To know and recognize common dangerous driving habits.

Concepts Treated:

- Many things which people commonly do while driving are dangerous.
- Many things which people do frequently and which are not dangerous most of the time become dangerous when done while driving.
- Drivers often know that their habits are dangerous but persist in them.
- Passengers often have difficulty influencing the actions and habits of drivers.

ACTIVITY

The class breaks into small groups and each group identifies driving habits and behaviors which are unsafe. However, these behaviors are not to include actual driving practices which are normally discussed as part of driver education classes--such as failing to signal turns, passing on curves, and coming to a complete stop at stop signs. Rather, students identify those dangerous habits and behaviors which are often not associated in the mind of the public with automobile safety and are not addressed in many public safety messages. Examples of such behaviors include

- Failure to completely clean windshield and rear window during or after snowstorms

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*This activity also appears in Mini-unit 2.

- Daydreaming
- Girl/boy watching
- Looking for signs or street numbers
- Reading maps
- Engaging in personal hygiene (combing hair, cleaning ears)
- Allowing boisterous or easily panicked animals to be unrestrained in the car
- Driving barefooted
- Eating and drinking
- Talking animatedly
- Chasing bugs which fly into a car
- Restraining children
- Viewing scenery
- Being distracted by passengers who are talking excessively; pointing out scenery, events, etc.; horsing around; arguing; or being affectionate
- Turning around to look at backseat passengers while driving
- Driving while sleepy or very upset
- Lighting a cigarette, cigar, or pipe
- Avoiding or cleaning ashes from a cigarette
- Searching for things in pockets, wallets, purses, glove compartments, back seats
- Fiddling with radio or tape deck

Groups present their lists to the class, and the master list of dangerous driving habits is developed. Follow-up discussion is held on one or more of the following issues:

1. How many people know these are dangerous habits but engage in them anyway?
2. If people do not realize these are dangerous habits, how can they be brought to this realization?

3. If people are aware of the dangers but continue to practice the habits, what, if anything, can be done to help them change their habits?

4. Should passengers inform drivers of their dangerous driving practices? If so, are there ways of doing this without making the driver angry or defensive?

5. How can drivers who have difficulty avoiding these dangerous habits but would like to change them develop the self-discipline and self-awareness to do so?

6. How can drivers effectively and politely persuade passengers not to disturb their concentration?

Evaluation:

Students role play situations in which a driver or a passenger is engaged in unsafe practices. Students must identify the unsafe practice and try to persuade the other person to stop it (see Activity #10).

Variations and Supplementary Activities:

Students can poll drivers and passengers on the extent of these dangerous practices (see Activity #39).

Younger students can watch for unsafe driving habits in their parents, school bus drivers, and relatives and discuss them in class.

Students can interview driver education teachers on the most common unsafe driving habits novice or experienced drivers engage in and how these teachers attempt to promote safe driving habits.

Students can research the extent to which car theft is related to automobile safety. For example, many accidents result from joyriding. Car owners and drivers can reduce joyriding by not leaving their keys in the car and keeping it locked when it is not in use.

Students can research the ways in which modifying cars, jeeps, and other motor vehicles can contribute to driving hazards. For example, students can consider the effects on safety of using oversize tires, special air cushion shocks and special rear-end springs.

ACTIVITY #2*

Mini-unit Topic: Surveying Transportation Safety

Approximate Class Time: 1 period

Capsule Activity Description: Students ask their parents why they do (or do not) wear safety belts.*

Goal:

To understand why some people do and some do not wear safety belts.

Concepts Treated:

- Concern for safety is often a low priority item of people.
- Many people don't believe accidents happen to them.
- Many people resist regulations, even if they are made for their own benefit.

ACTIVITY

Ask your students whether their parents habitually (i.e. most of the time) wear safety belts when they drive. Also ask them whether their parents insist that the students wear safety belts.

If, as will probably be the case, only about half of the parents wear safety belts or insist that their children wear them, discuss why so many people seem to be unconcerned with safety and take unnecessary risks by driving or riding without fastening safety belts. Have the class develop a list of likely reasons why people are unconcerned about automobile safety or safety belts.

Discuss whether, given the public's apparent lack of concern, the government should mandate the wearing of safety belts. In Canada, the Province of Ontario has a law that requires safety belts to be worn.

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*This activity also appears in Mini-unit 3.

Evaluation:

Students list all the reasons they have been given for not wearing safety belts and write a sentence that indicates why the reason is not valid.

ACTIVITY #3*

Mini-unit Topic: Surveying Transportation Safety

Approximate Class Time: 1 period

Capsule Activity Description: Students learn the facts about drinking and driving and discuss them.*

Goal:

To understand how alcohol affects people and makes driving more dangerous for them.

Concepts Treated:

- Alcohol affects the reaction time of drivers.
- Alcohol increases the likelihood of accidents.
- Alcohol is involved in 50 percent of all fatal traffic accidents.
- Blood alcohol content is an objective measure of whether a driver was under the influence of alcohol.
- Body weight affects alcohol's effect on the drinker.
- Teenagers are more likely than other age groups to be adversely affected in their driving by drinking.

ACTIVITY

Begin this activity by having students take a brief quiz to evaluate their grasp of the facts about drinking and driving. A sample quiz is provided on Spirit Master #4.

Tabulate the answers on the chalkboard and then pass out duplicated copies of the information about drinking and driving provided on the pages at the end of this activity. Have the students read and then discuss the information provided, comparing it with their answers to the questionnaire. You may distribute copies of one of the brochures suggested in the bibliography and have students read and discuss the data provided. Alternatively, use the information provided as the basis of a lecture about drinking and driving. You should guide the discussion of the class so that it concentrates on a specific aspect of the drinker-driver problem, such as

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*This activity also appears in Mini-unit 4.

- The effects of alcohol abuse on driving ability
- The relationship between alcohol use and traffic accidents
- The special dangers of teenage alcohol abuse and driving
- Myths about drinking's effects on driving
- How to feel comfortable among drinking friends if your choice is *not* to drink

If the class shows and maintains interest, you can guide the discussion to related issues, such as

- Why do people drink excessively when they know they will be driving?
- What are the excuses some drunk or impaired people use to convince themselves they are capable of driving safely?
- Should friends or relatives try to convince each other not to drive after drinking excessively or not to ride with drivers who are impaired (see Activity #13)?
- Are there ways people can be motivated not to drive when impaired, not to drink excessively when they will be driving, and not to ride with drivers who are impaired (see Activity #13)?

Answers to sample quiz on Spirit Master #4:

1. c
2. d
3. c
4. d
5. c
6. a
7. c
8. d
9. d
10. b
11. c
12. h
13. b
14. d

Evaluation:

The role play in Activity #19 can be used as an evaluation.

Drinking and Driving*

How Is Drinking Related to Traffic Accidents? Although up to half of all motorists drink alcohol and then drive at some time, these drivers do not significantly increase the risk of accidents, either because they drink in moderation or they allow sufficient time to elapse before driving. However, despite the responsible drinking and driving behavior of most citizens, a strikingly large percentage of traffic accidents and fatalities involve excessive alcohol use on the part of the drivers and pedestrians. The U.S. Department of Transportation (DOT) has concluded on the basis of a number of studies that in nearly 50 percent of all fatal automobile crashes one of the drivers was drunk. This means that drinking is involved in about 25,000 of the 53,000 annual fatal highway accidents in the United States. Furthermore, DOT estimates that alcohol abuse is involved in 800,000 of the 14 million annual nonfatal accidents occurring in the United States. In short, DOT has concluded that alcohol is the most important single factor leading to fatal crashes and one of the major factors causing nonfatal crashes.

Most of the drinking motorists tested for drinking after involvement in fatal and serious accidents have been drinking very heavily--six or more drinks within one to three hours before driving. Based on this finding and through examination of the community records of such drivers, DOT believes that two-thirds of all traffic fatalities in which alcohol is a factor involve problem drinkers and alcoholics. Social drinkers are involved in only one-third of these crashes, but the problem of the social drinker who had "one too many" is a major problem, too.

What is the increased likelihood of a driver who drinks getting into an accident? The DOT estimates that a person who has had five to eight drinks a couple hours before driving is six times more likely to get into an accident than a driver who has not been drinking. A person who has had nine or more drinks before driving is twenty-five times more likely to crash.

Recently, however, some researchers have questioned the reliability of the studies on which the DOT figures are based, noting that many people involved in traffic accidents are never tested for alcohol consumption and that these untested people probably include many drivers and pedestrians who have not been drinking. Moreover, these dissenting experts point out that just because someone has been drinking--even excessively--before a crash, this does not prove that he must have been responsible for the accident, or if he was, that alcohol was the cause. Nevertheless, these researchers conclude that even when in some future study *all* victims of accidents *are* tested for prior drinking, "it may be found that the actual frequency of 'alcohol involvement' in

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*Adapted from U.S. Department of Transportation *1968 Alcohol and Highway Safety Report* and other sources by Peter Finn.

fatal crashes is in the range of 25 to 34 percent..."* In other words, alcohol still appears to play a major role in traffic fatalities and presumably accidents. At the very least, then, we can conclude that the more alcohol in someone's blood stream before driving, there is a greater likelihood that (1) he will crash; (2) he will be responsible for any crash in which he is involved; and (3) any such crash will be fatal or severe.

When Will Drinking Impair Driving Ability? While drinking and driving can mix when the drinking is moderate or when enough time elapses between the time a person drinks and the time he drives, just how many drinks impair a person's ability to drive safely? Alcohol-traffic safety experts have conducted enough tests to answer this question. They have determined this number of drinks by scientifically testing motorists' driving performance while totally sober and then after drinking varying amounts of alcohol. However, in order to make these tests accurate, the experimenters measured not just how many drinks the drivers consumed, but *how much alcohol was in their bloodstream.* This was essential because alcohol affects people only when it enters their bloodstream and only when it has reached a certain level in their bloodstream. This amount of alcohol in the blood is called *blood alcohol content* or *BAC.*

Only four factors can affect the amount of alcohol in a person's blood--his BAC:

1. The *amount* of pure alcohol he drinks, not the number of drinks. For while one beer, one glass of wine, and one mixed drink all contain approximately the same amount of pure alcohol (1 once), certain cocktails, like martinis and manhattans, that combine two types of alcohol, contain much more pure alcohol (1½-3 ounces). In addition, some people make mixed drinks with considerably more alcohol than the one ounce normally included.

2. Whether the person has *eaten* before drinking or eats while drinking. Food will slow down the passage of alcohol into the small intestine and from there into the bloodstream. Moreover, the food adds water to the stomach thereby diluting the alcohol.

3. How much a person *weighs.* Weight affects BACs because the more someone weighs, the more blood he has. And the more blood he has, the more he must drink to reach the same BAC level as someone who has less blood--that is, weighs less.

4. How long the person *waits* after drinking or between drinks influences BACs because the longer the wait, the more time the liver and body tissues have to oxidize the alcohol and eliminate it from the body.

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*Richard Zylman. "Overemphasis of Alcohol May be Costing Lives." *Police Chief* (Vol. XLI, No. 1, January 1974), page 67.

Nothing else affects a person's BAC. Mixing drinks will not cause increased intoxication nor will cold showers, drinking hot coffee, and a host of other so-called "cures" for drunkenness reduce intoxication, simply because they don't change the amount of alcohol *in a person's blood* and thereby alter alcohol's affects on his behavior.

To return, then, to the original question of how many drinks will impair a motorist's ability to drive a car safely: For an adult male who weighs 175 pounds, has not eaten before drinking, and does not wait very long before driving after drinking, a BAC of .05 percent (as few as three drinks) is *likely* to impair his driving performance to some extent. Impairment can occur, however, at BACs as low as .01 and .04 percent (1-2 drinks) for some people.*

There is one other element involved in predicting how drinking will affect driving performance. Drivers who have consumed moderate amounts of alcohol (1-2 drinks) and have moderate BACs (.03-.05 percent) and who are experienced drinkers and experienced drivers can partly compensate for their impairment because they are familiar with what alcohol does to them and can make a conscious effort to compensate for its effects such as concentrating harder, driving more slowly, and avoiding busy streets. However, this ability to compensate for impairment decreases rapidly with higher BACs, is of little value to the novice driver or inexperienced drinker, and is of no value to any motorist who is confronted by something unexpected while driving.

What Effects Can Alcohol Have on Driving Performance? Below is a list of some of the physical and behavioral effects drinking *can* produce on drivers with low BACs and *will* produce on drivers with high BACs that will increase their risk of crashing.

Behavioral Effects

1. *Reduced ability to judge things*, such as distances, speeds, angles

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*Although several studies have indicated that drivers who have drunk a little alcohol (1-2 drinks) and have low BACs (.01-.04 percent) before driving are involved in fewer accidents and fatalities than alcohol-free drivers, this may be because such drivers compensate for their drinking by driving even more carefully than they do when sober. Moreover "better drivers are most likely to drive at low BACs and are also most likely to drive during periods of least traffic when it is easier to compensate for impairment" (Richard Zylman. "The Variability of Collision Involvement at Low Blood Alcohol Concentrations: The Grand Rapids Curve Explained." *Blutalkohol: Alcohol, Drugs and Behavior* (Vol. 9, No. 1, January 1972), page 30.

2. *Dulling of critical judgement capacities* and therefore reduced awareness of one's deteriorating performance: even though the motorist is driving poorly, *he* doesn't think he is

3. *Increased tendency to take risks* because of feeling over-confident, such as passing on curves and hills

4. *Reduced ability to concentrate,* for example, on speed or intersecting traffic

5. *Concentration on only one part of the traffic scene* and ignoring other parts. This reduces the driver's ability to deal with many rapidly changing factors, such as altered speed limits, stop lights, curves, and lateral traffic and pedestrians

6. *Forgetfulness,* such as not turning lights on at night, leaving high beams on, not signalling turns

Physical Effects

7. *Impaired reflexes.* Reduced ability in particular to deal with the unexpected, like skids, blinding by oncoming high beams, sudden appearance of other cars or pedestrians, changing signal lights, road construction, faulty or wet brakes, etc.

8. *Reduced vision.* Reduced peripheral vision: increased difficulty seeing what is going on to the left and right; reduced night vision (something made even more difficult in smokers, since carbon monoxide in the blood also reduces night vision); reduced depth perception: ability to determine the relative nearness or distance of an object; and reduced sharpness of perception, culminating in double vision at high BACs

9. *Sleepiness,* with resulting reduced concentration and vision

Not only are drivers who drink likely to experience these effects after a few drinks and sure to experience them after several, if these drivers are already in poor health, fatigued, taking other drugs (especially tranquilizers and barbiturates), or inexperienced at drinking or driving, the impairing effects of alcohol will be magnified even more.

Some of the actual dangerous *driving behaviors* that excessive drinking can cause include

- Performing normal driving tasks more slowly, including braking, turning, signalling, stopping

- Passing on curves and hills

- Weaving

- Driving excessively slowly or fast
- Running stop lights and stop signs
- Responding tardily or overreacting to unexpected occurences, like children running out, or to expected happenings, like curves
- Failure to see soon enough or clearly enough, or failing to see pedestrians and cars that suddenly appear
- Driving the wrong way down one-way streets
- Crossing the double white lines and driving out of lane

Statistics have long indicated that drivers under twenty-five years old are involved in a disproportionate number of *all* accidents based on the number of licenses held. However, this basis for estimation does not take into account the *exposure* of youths to accidents--that is, it is not based on a per unit mile of driving. Since it is possible that youths drive more miles per year than older drivers, it seems reasonable to infer that while youths are indeed involved in a higher proportion of accidents than older citizens, this proportion may not be as great as has been frequently assumed.

Moreover, several studies have shown that teenagers may not drive after drinking as often as many people believe, certainly not as often as motorists in their early twenties. In fact, the heaviest frequency of driving after drinking occurs among motorists *over* twenty-five years of age.

Thus, while the evidence indicates that youths are clearly involved in drinking and driving accidents, the extent and nature of the problem may not be as great as for older citizens. Nevertheless, teenage drinking and driving definitely merits special attention for the following three reasons:

While youthful drivers in general may not drive after drinking as often as adults do, studies indicate that youths who *do* drink even *moderate* amounts of *alcohol and then drive are much more likely to be involved in accidents* than are older drivers. Education is therefore needed to inform youthful, novice drinker drivers that *even small amounts* of alcohol *for them* are of greater danger than for older, experienced drinker drivers. The explanation for this high teenage accident rate after drinking even one or two drinks is that not having had as much experience as older people with how alcohol affects them, many teenagers have not yet learned how to *compensate* for their impairment--for example, by driving more slowly, leaving before dark, concentrating harder, or avoiding heavy traffic; and not having had as much driving experience as older motorists, they cannot benefit as much from automatic driving habits and automatic responses to normal and to unexpected motoring events as can older motorists.

No matter how many alcohol-related accidents teenagers are involved in, there are enough such crashes to warrant special attention in order to reduce the number of alcohol-related accidents and deaths.

Regardless of how many alcohol-related accidents teenagers are involved in, these young people are going to grow up into adults who, on a statistical basis, may be involved in as many as 30,000 fatalities and 800,000 alcohol-related accidents a year. If we hope to reduce this number of *adult* crashes, we must educate youths before drinking and driving habits have become ingrained.

ACTIVITY #4*

Mini-unit Topic: Surveying Transportation Safety

Approximate Class Time: 1 period

Capsule Activity Description: Students discuss the importance which safety considerations should have when buying a vehicle primarily for another purpose.*

Goal:

To understand the different reasons which people have for buying cars.

Concepts Treated:

- For many people, a car is more than mere transportation.
- An automobile has multiples uses.
- Over the years, a person experiences changing needs and desires concerning automobiles.
- Purchase of an automobile often involves compromises between several different wants.

ACTIVITY

Students, in small groups, discuss how important safety should be considered in buying a car for another purpose. Different groups can discuss the importance safety should have when buying these vehicles: a sports car (primarily for fun); a pickup truck (primarily for carrying goods); a minicar (primarily for fuel economy); or a motor home or vacation trailer (primarily for recreation).

Students should consider that most vehicles will be used by more than one person (such as husband and wife). Among the points they should consider are

- Will all users be able to use the vehicle safely and properly?
- Are the upkeep costs such that the owners will be able to afford maintenance and service necessary for safety?

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*This activity also appears in Mini-unit 5.

- Is a fast vehicle safer or less safe than a slow one?

- Is a new vehicle safer or less safe than a used one?

Groups report their conclusions to the class and respond to comments and questions from students. Compile on the chalkboard a list of the purchase criteria the groups have come up with and arrive at a class consensus on what they should be, such as use for automobile, necessary safety features, and income considerations.

Evaluation:

Students write "Dear Abby" letters from someone who plans to buy an automobile. Students exchange letters and each student responds to one student's letter in terms of what kind of car should be purchased and why, from a safety point of view.

Alternatively, students can reply to the following letter:

> Dear Abby:
>
> My husband and I need a new car, but we can't agree on what to buy. For the past 30 years we have owned a station wagon of one kind or another, but now our children are grown and married, and live with their families in other states. We don't really need a big car like that anymore. My husband is going to retire next year so we want to buy a car soon. The problem is he wants to buy a second-hand pickup truck so he can put a camper on the back of it and go fishing with the boys. He doesn't think we need a new car or even a *new* truck.
>
> I want a Ferrari. For 30 years I have been carting kids and bundles around in a big box with wheels; I want a fun car for a change. Anyway, when we visit the kids we could get there much faster in a sports car; it would take forever in an old pickup truck.
>
> My husband doesn't think it would be safe for me to drive a Ferrari; he thinks I can't handle the speed. *I* think it wouldn't be safe for me to drive a pickup truck; I don't think I could handle such a clumsy vehicle.
>
> Our marriage is on the rocks because of this. How can my husband and I resolve our problem?
>
> Sincerely,
>
> "Pick-me-up-a-sports-car"

Variations and Supplementary Activities:

Students can choose an "ideal" automobile from a safety point of view and then discuss and defend their selection criteria.

Students can interview automobile salespersons on what kinds of cars most customers buy and whether safety is a sales feature.

ACTIVITY #5*

Mini-unit Topic: Surveying Transportation Safety

Approximate Class Time: 1 period

Capsule Activity Description: Students discuss what restrictions they would set for their children on walking and playing safely.*

Goal:

To understand what are reasonable rules of safety for children of different ages.

Concepts Treated:

- Safety seems more important often to the observer than to the person engaging in unsafe conduct.
- Safety regulations may be different for different groups.
- Threat of punishment is not always an effective deterrent.

ACTIVITY

Prior to this class, students are given a sheet instructing them to set rules for a son and daughter regarding pedestrian safety. A sample sheet is on Spirit Master #6.

Students break into small groups and are given instructions to read each other's papers; discuss and record on a blank group sheet the best rule and punishment for each safety problem; and if different rules or punishments were set for the son and daughter, justify these. Groups report results to class and respond to comments and questions from class and teacher. If it is not brought up, you may want to discuss why some punishments are more harsh or lenient for particular safety problems.

Evaluation:

Students write the dialogue to scenarios in which a son or daughter argues over safety rules with his/her parents.

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*Appears also in Mini-unit 6.

Variations and Supplementary Activities:

Students can fill out the sheets in class or as homework prior to the discussion.

Class can role play parents and defend their rules.

ACTIVITY #6*

Mini-unit Topic: Surveying Transportation Safety **Approximate Class Time:** 1 period

Capsule Activity Description: Through discussion and research, students learn how to avoid common beating accidents.*

Goal:

Knowledge of proper techniques for boarding, disembarking, loading and unloading a boat and for dealing with emergency situations.

Concepts Treated:

- Boats are unstable.
- A boat must be kept balanced during all activities.
- If the boat capsizes, stay with it.
- If a person falls overboard, throw something, almost anything, near the person.
- Always wear personal flotation devices while boating.
- Weather is an important factor in boating safety.

ACTIVITY

As a class, discuss the proper boating techniques for boarding, loading, unloading, disembarking, capsizing, and person overboard. You may assign some of the students to research the proper methods, using the attached material, or other books, or you may make input to the discussion using the materials attached.

Boarding

1. The number of seats in a boat does not show capacity. Seats are arranged so boat can be loaded evenly.

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*Appears also in Mini-unit 7.

2. Board the boat one at a time.

3. Don't jump off dock, the boat may tip over.

4. Step down slowly and gently into the middle of the boat.

5. Keep weight low and move slowly from dock to boat.

Equipment Loading

1. Don't drop equipment into the boat. A person standing on the dock passes equipment to a person in the boat.

2. If there is no helper, move equipment to the edge of the dock, board the boat, then lift equipment off the dock piece by piece.

3. Distribute equipment *evenly* in the boat.

Disembarking

Leave a boat in the same manner you board it, keep weight low, move slowly.

Unloading

Unload a boat in the same manner you load it, piece by piece, and preferably with the help of a person standing on the dock.

Capsizing

1. A boat can capsize if it is overloaded or equipment or people are improperly loaded.

2. Capsizing occurs when a boat turns over and spills crew and equipment into water.

3. Stay with the boat as long as it is floating: do *not* try to swim to shore. It's farther than you think.

4. If you are not already wearing a personal flotation device (PFD), such as a lifejacket, put one on.

5. Try to turn the boat rightside up and empty it of water, while floating alongside yourself.

6. If you can get the boat half empty then climb in--very carefully--and finish bailing.

7. Don't try too hard. Working in the water will make you very tired. If you can't get the boat upright and empty, save your energy and signal for help.

Person Overboard

1. If the boat is improperly loaded, someone may fall off.

2. If someone is sitting dangling legs in water or in an unsafe position (crosslegged, on bow, or gunwales) or standing, even a small wave can cause him or her to lose balance and fall overboard.

If Someone Falls Overboard

1. Call out "Person overboard!"

2. Throw a buoy or cushion or ring buoy near not *at* person in water

3. If you don't have such items on board, extend an oar or paddle to the person

4. Never take your eye off the person in the water.

5. Never dive in the water after the person.

Things to Remember or Do Before Going Out in a Boat

1. Never go out without proper equipment, especially PFD's.

2. Learn to swim before you take up boating.

3. Learn how to operate your boat or go out with someone who is already experienced.

4. Check the weather.

5. *Never go out alone*. If you must, leave a "float plan"--where you expect to go and when you expect to return.

To demonstrate the proper way to board a rowboat, sailboat, canoe, or small motorboat, place a large but not too tall table at the front of the room to use as the "dock." Small benches, stools, or chairs which are lower than the table are placed alongside. Using these props, simulate boarding and loading a boat as well as disembarking and unloading.

Evaluation:

Students answer questions about boating safety. (For example, Questions 26 and 27 of Activity #50 can be asked.)

Variation and Supplementary Activity:

In a swimming pool or swimming area of a lake have an "overboard" student call for help from another in a raft, innertube, rowboat, or canoe 15 to 20 feet away. Compare the different times required for the rescue considering the following methods:

1. Rescuer throws a 25 foot rope to the person overboard
2. Rescuer throws a 25 foot rope with a float on the end to the person overboard
3. Rescuer paddles to the person overboard
4. Rescuer swims to the person overboard

Discuss the importance of carrying rescue equipment such as ropes and floats along while boating.*

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*This supplementary activity was designed by Donald Bockler.

ACTIVITY #7*

Mini-unit Topic: Surveying Transportation Safety **Approximate Class Time:** 1 period

Capsule Activity Description: Class discusses the nature of emergency vehicles.*

Goal:

Knowledge of different kinds of emergency vehicles and the special duties which each performs will be learned.

Concepts Treated:

- What is an emergency?
- Different kinds of emergencies call for different kinds of services.
- Some emergency vehicles, like fire engines, provide more than one kind of emergency service.
- Speed is of the essence in most emergency situations.

ACTIVITY

Set the stage for other activities on emergency vehicles by asking students what they think the phrase "emergency vehicle" means. Amplify their comments, as necessary, with the following information. "Emergency vehicle services" refers to the provision of assistance to citizens through the use of vehicles when speed and special equipment are required to prevent or alleviate injury, suffering, or economic loss. Vehicles regularly involved in providing emergency services include ambulances, police cars, fire engines, helicopters, airplanes, and Coast Guard rescue boats.

Discuss the importance to the public of having quality emergency vehicles available by enumerating the instances in which such services are essential or valuable. For example, recent medical studies have shown that the care given to the injured or sick in the minutes immediately following an emergency is crucial to the chances for recovery. A recent U.S. Department of Transportation study stated that "23 percent of auto fatalities died of probably survivable injuries due to problems throughout the emergency care system." There has been growing concern in many communities over the wide variations in speed of response and quality of care that is available. In a matter of such serious personal concern, it is important for a potential user of this type of emergency service to be aware of the emergency care system in his community, and when and how to use it.

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*Appears also in Mini-unit 8.

Through a program of education, the transportation consumer can learn to make responsible decisions about the appropriate service to contact in an emergency, how to contact it, methods of assuring adequate community emergency services, and seeking redress of grievances. These skills will facilitate not only the use of the service, but also will stimulate its communitywide improvement.

Special mention can be made of the use by the public of the *fire department* for all kinds of emergencies, both appropriately and inappropriately. Many residents know that a call for an ambulance or police car may not produce help for as long as an hour. ". . . there is a backlog of ambulance calls in the South Bronx, and we will have to wait forty-five minutes before one will arrive." But turning in a fire alarm will always bring the fire fighters. "The only real sure thing in this town (New York City) is that the firemen come when you pull the handle on that red box.* Young students need to be aware of both the reliability of this source of emergency help, and the inconsideration and dangers of using it unnecessarily.

Evaluation

Students answer questions about emergency vehicles, such as Questions 30 and 32 in Activity #50.

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*New York City fire fighter Dennis Smith, writing in his novel *Report from Engine Co. 82*.

ACTIVITY #8*

Mini-unit Topic: Surveying Transportation Safety **Approximate Class Time:** 1-2 periods

Capsule Activity Description: Students examine and report on brochures, instructional materials, and other promotional and descriptive literature about recreational vehicles available from dealers and manufacturers.*

Goal:

To know different kinds of recreational vehicles and their uses and special dangers.

Concepts Treated:

- As in all transportation-related accidents, an accident with a recreational vehicle depends on the persons involved, the machine, and the environment.
- Off-the-road operation of a vehicle is no guarantee against accidents.
- Gasoline is always a dangerous substance.
- Vehicles that are used mainly in winter add the dangers of snow and ice to those in operation.

ACTIVITY

Either by visiting retail dealerships, writing to manufacturers of recreational vehicles, or both, students collect literature describing snowmobiles, trailers, mopeds (motorized bicycles), campers, dune buggies. The class then breaks into small groups set up around different manufacturers of the same vehicle (e.g., campers) or around different types of recreational vehicles and compares what their materials have to say about the safety considerations involved in purchasing, using, and maintaining these vehicles. Each group may have to break into even smaller groups (or one-person subcommittees) to get further information from dealers, manufacturers, or state agencies on some of the questions listed below.

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*Appears also in Mini-unit 9.

- For what types of activities can the vehicle be used?

- What are the potential dangers of each of these activities? (Hazards can include not only dangers of vehicle-related injury, but also exposure, freezing, getting lost, being trapped by sudden changes in weather, and mechanical breakdowns.)

- What are the performance capabilities and limitations of each vehicle researched? For instance, a jeep-type vehicle often has a high center of gravity, and may not be appropriate for very steep grades.

- What types of support do these vehicles require, such as gasoline, water, plumbing facilities, and electricity? Are there risks associated with being cut off from these services or materials?

- What kind of precautions are needed when fueling the vehicle?

- What options are available for purchase with each vehicle and what are their safety implications? Do they increase the likelihood of mechanical failure? Do luxury features increase or decrease the safety of the vehicle?

- How useful, and how safe, are the vehicles as basic transportation? (Students can consider brakes, tires, maneuverability, visibility, comfort, degree of driving fatigue, gasoline consumption, and ease with which a small person can drive the vehicle.) Are there safety features that are required for automobiles which are not required for some recreational vehicles?

- Are special skills needed to operate any of these vehicles? If so, how can these skills be learned?

- Do any of these vehicles operate in a hostile environment (water, snow, cold weather)? If they do, does this require any special precautions?

- Are there any minimum performance standards which these vehicles should meet (as regards, for example, horsepower, speed, weight, and durability)?

- What safety equipment should be carried with each vehicle? (For example, consider the safety implications of the various types of gas cans, flares, chains, shovels, and blankets.)

- How much emphasis is placed on safety, how much information is provided about safety features, and what warnings are provided about safe operation in the promotional literature for these vehicles?

- What are your state's laws concerning the purchase, registration, licensing, and use of each recreational vehicle?

If there are discrepancies among the various manufacturers with respect to standard and optional safety equipment and features, students discuss why such variations exist and do further research (with manufacturers, local and state agencies, and in the library) to ascertain factual accuracy of the claims made in various brochures.

Each group prepares a report which is given orally to the class. Class discussion then centers on evaluating utility and safety of the various kinds and models of recreational vehicles.

Students role play a customer entering a retail store selling recreational vehicles and question a salesperson about the safety features and safe operating procedures for different recreational vehicles.

Variation and Supplementary Activity:

Students can invite salespersons and mechanics to class to explain the safety aspects of the recreational vehicles they sell or service.

MINI-UNIT 2

UNDERSTANDING DRIVING HABITS

This mini-unit deals with the basic form of transportation in the United States, the automobile. Specifically, we address the issue of safe and unsafe driving habits.

Some of the students in your class will not be old enough to be drivers themselves, although most of them, no doubt, are eagerly looking forward to the day when they will be able to obtain their driver's license. Because your students are not drivers, and because this unit is meant to be used not just in driver education classes, we take a spectator's (or passenger's) view of what makes a driver safe. If your students, as passengers, learn what are good and what are bad driving habits, they may be motivated to concentrate on the good habits when they themselves finally get behind the wheel of a car.

Among the concepts treated in this unit are

- People often persist in dangerous driving habits even though they know these are dangerous.
- Many different factors can make driving dangerous; there is no one cause.
- Passengers sometimes cause drivers to do dangerous things.
- Hitchhikers sometimes cause accidents.

MINI-UNIT 2 LESSON PLAN

Understanding driving habits

Activity #	*Activities*	*Class Time*
9[a]	DESCRIPTION: Students identify and then discuss common driving habits that are dangerous. GOAL: To know and recognize common dangerous driving habits.	½-1 period
10	DESCRIPTION: Students role play drivers and passengers in situations that involve safe (or unsafe) driving habits. GOAL: To understand the pressures on drivers and passengers that make for unsafe driving.	1 period
11	DESCRIPTION: Students perform science experiments which illustrate automobile driving safety considerations and issues. GOAL: To understand the scientific basis for some safety rules.	1-2 periods
12	DESCRIPTION: Students observe safe and dangerous practices of people with whom they travel, keep a log of their observations, and discuss their observations. GOAL: To identify common dangerous driving habits and to learn whether they are associated with particular groups of persons.	1-2 periods

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[a] This activity also appears in Mini-unit 1.

MINI-UNIT 2 LESSON PLAN (CONTD.)

Understanding driving habits

Activity #	*Activities*	*Class Time*
13 Spirit Masters #1, #2	DESCRIPTION: Students act out the parts in the script of "Fleming vs. Rondo--A Hearing." Without the script, they complete the hearing and come to a conclusion. GOAL: To understand the probable causes of accidents and the contributions of the persons, automobiles, and the environment to the accident.	1½-2 periods

Total Class Time: 5-8 periods.

ACTIVITY #9*

Mini-unit Topic: Understanding Driving Habits

Approximate Class Time: ½-1 period

Capsule Activity Description: Students identify and then discuss common driving habits that are dangerous.

Goal:
To know and recognize common dangerous driving habits.

Concepts Treated:

- Many things which people commonly do while driving are dangerous.
- Many things which people frequently do and which are not dangerous most of the time become dangerous when done while driving.
- Drivers often know that their habits are dangerous but persist in them.
- Passengers often have difficulty influencing the actions and habits of drivers.

ACTIVITY

The class breaks into small groups and each group identifies driving habits and behaviors which are unsafe when driving. However, these behaviors are not to include actual driving practices, which are discussed as part of driver education classes, such as failing to signal turns, passing on curves, and coming to a complete stop at stop signs. Rather, students identify those dangerous habits and behaviors which are not often associated in the mind of the public with automobile safety and are not addressed in many public safety messages. Examples of such behaviors include

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*This activity also appears in Mini-unit 1.

- Failure to completely clean windshield and rear window during or after snowstorms
- Daydreaming
- Girl or boy watching
- Looking for signs or street numbers
- Reading maps
- Engaging in personal hygiene (combing hair, cleaning ears)
- Allowing boisterous or easily panicked animals to be unrestrained in car
- Driving barefooted
- Eating and drinking
- Talking animatedly
- Chasing bugs which fly into a car
- Restraining children
- Viewing scenery
- Being distracted by passengers who are talking excessively, pointing out scenery or events, horsing around, arguing, or being affectionate
- Turning around to look at backseat passengers while driving
- Driving while sleepy or very upset
- Lighting a cigarette, cigar, or pipe
- Avoiding or cleaning ashes from a cigarette
- Searching for things in pockets, wallets, purses, glove compartments, back seats
- Fiddling with radio or tape deck

The groups present their lists to the class, and a master list of dangerous driving habits is developed.

Follow-up discussion is held on one or more of the following issues:

1. How many people know these are dangerous habits, but engage in them anyway?

2. If people do not realize these are dangerous habits, how can they be brought to this realization?

3. If people are aware of the dangers, but continue to practice the habits, what, if anything, can be done to help them change their habits?

4. Should passengers inform drivers of their dangerous driving practices? If so, are there ways of doing this without making the driver angry or defensive?

5. How can drivers who have difficulty avoiding these dangerous habits but would like to change them develop the self-discipline or self-awareness to do so?

6. How can drivers effectively and politely persuade passengers not to disturb their concentration?

Evaluation:

Students role play situations in which a driver or a passenger is engaged in unsafe practices. Students must identify the unsafe practice and try to persuade the other person to stop it (see Activity #10).

Variations and Supplementary Activities:

Students can poll drivers and passengers on the extent of these dangerous practices.

Younger students can watch for unsafe driving habits in their parents, school bus drivers, and relatives, and discuss them in class.

Students can interview driver education teachers on the most common unsafe driving habits novice or experienced drivers engage in and how these teachers attempt to promote safe driving habits.

Students can research the extent to which car theft is related to automobile safety. For example, many accidents result from joyriding. Car owners and drivers can reduce joyriding by not leaving their keys in the car and keeping it locked when it is not in use.

Students can research the ways in which modifying cars, jeeps, and other motor vehicles can contribute to driving hazards. For example, students can consider the effects on safety of using oversize tires, special air cushion shocks, and special rear-end springs.

ACTIVITY #10

Mini-unit Topic: Understanding Driving Habits **Approximate Class Time:** 1 period

Capsule Activity Description: Students role play drivers and passengers in situations that involve safe (or unsafe) driving habits.

Goal:
To understand the pressures on drivers and passengers that make for unsafe driving.

Concepts Treated: Factors that make drivers engage in unsafe driving habits include

- Crowding of car
- Length of drive
- Unfamiliarity with roads
- Distracting conversations
- Unresolved feelings of rivalry or hostility toward passengers

ACTIVITY

Place several chairs at the front of the room to set the stage for short skits about automobile trips. Ask for volunteers or assign students to fill the various parts outlined in the role profiles which appear at the end of this activity on the next page. Each skit takes place in a car enroute to its destination. The students in the skit leave the room while the profiles are read to the class. The students return to the room, and each reads the profile to him/herself. The skits are then acted out spontaneously. After each skit, the participants tell how they felt about the skit and each other's behavior. The class then discusses the specific problems associated with the trip and how the trip could have been made better and safer for both driver and passengers.

After all the skits have been performed, discuss the following issues:

- How do you feel when you are trying to do something and somebody is bothering you?
- How do you think a driver feels when he or she is in the car and is being bothered?
- What is the difference between being distracted at home and in a car?
- Who is responsible for making a trip safe? Why? What are your responsibilities when traveling in an automobile?

Evaluation:

After the role play is over, have students draw up a list of do's and don'ts for drivers and passengers.

Skit 1: Family Going to the Beach

Driver (mother or father): Traffic is just terrible. It has been bumper to bumper ever since you left home an hour ago. The beach is great, but why does it take so long to get there? The kids have been jumping around the car from the minute they go in and the dog should have been left at home. Your wife/husband is no help in keeping the kids entertained. She/he just stares out the window pretending everything is just fine in the back seat. Oh no, the noise is getting worse! Why is that dog whimpering? Those kids are going to get it if they don't keep the noise down. You've had it! What do you say?

Parent (mother or father): You are so exhausted. It took forever this morning to get the kids ready to go to the beach. You forgot to buy bologna for sandwiches, so all you've got for lunch today is peanut butter and jelly. Ick! Why doesn't anything ever go right? There better be enough towels, suntan lotion, balls, books, dog bones, shovels, pails, radios, magazines, cookies, and bottles of tonic to keep everybody happy. All you want to do is get to the beach and sleep. These trips just aren't any fun anymore. Any why does everybody have to go to the beach on the same day? This traffic just won't move. Why can't your husband/wife drive this car any faster? You're just poking along. You'll get there by supper time at this rate. Oh no, what is going on in the back seat? If those kids get into a fight you're just going to have Fred/Sally stop the car and they can get out and walk to the beach--and that dumb dog, too. You can't stand any more! You've got to say something.

Jimmy: Boy, is it ever hot in this car! Why can't Daddy and Mommy buy air conditioning when they get a car, like Jessica's mother and father? Your legs stick to the seat, and bugs come in the windows, and you're not even allowed to drink pop while you're riding in the car because you might spill something. This just isn't any fun at all. And that stupid sister of yours sitting over there with her head out the window is really making you mad. She knows she's not supposed to do that, but she always gets away with everything. She should only fall out of the car! Of course, at the rate you're moving, she wouldn't even scrape her elbow. Hey, what's that bug doing flying in your window? Oh boy, he landed right on the window ledge! Let's see if you can roll the window up and crush him. Owwwww!!!! You got your finger in the window!!! What do you do?

Donna: This is really neat. You love to ride with your head out the window; it is so much cooler, and you get to sing as loud as you want and look in the windows of the cars going by and see what everybody is doing. If your mother notices, she is going to yell at you, but she is looking out her window, thank goodness. The car ride has really been fun, so far. Your brother is over there talking to himself and hasn't bothered you once; the dog is asleep on the floor, and your parents haven't said one word since you left home. You wish all your car trips could be like this. Well, one more verse of "One Hundred Bottles of Beer on the Wall," and then you're going to wake the dog up and see if she wants to play for awhile. Hey, your hat just flew out the window! What do you do?

Skit 2: Two Couples on Their Way to a Restaurant

Fred Smith: Why did your wife choose to go to this restaurant in the middle of nowhere? You have no idea where you're going, and the directions you were given are terrible! Why does Bill think he knows where he's going--he's never been to this restaurant before. You should never have let him look at the directions; now he won't give them back to you. He keeps saying that it's unsafe to drive and read directions at the same time. You know perfectly well it's not unsafe. You've done it hundreds of times before. Now, if that chattering wife of yours would just hold the noise down, maybe you could remember the directions and get everybody to the restaurant without any help from Bill. You're just going to pay attention to the road and not listen to anybody.

Bill Rossi: You're sure you've been to this restaurant before. It was a long time ago, but once you've been somewhere, you always remember your way back. In fact, the last time you were here, you took a short cut that saved at least five minutes in driving time. You know you'll remember the turn when you see it. That road up ahead looks like the place you turned. You better warn Fred to put his signal light on for a right turn.

Jean Smith: Your husband always insists on driving whenever you go out together. It would make much more sense for you to drive--you're a better driver and have a better sense of direction. But no, he's the man of the house, and all men think they have to drive the car. You hope he gets lost tonight. It would serve him right for being so sure of himself all the time. If you continue to talk to Alice about your mother-in-law, maybe you will distract Fred from paying close attention to where he is going. Anyway, you had a big lunch today, and you wouldn't care if you had to wait another hour or so before eating dinner.

Alice Rossi: You are just starving! You didn't have a chance to eat lunch today because you were in the operating room from 10:00 this morning until 3:00 this afternoon. Some days it doesn't pay to be a doctor. Why did Jean have to pick a restaurant miles from home? And knowing Fred, he'll get you all lost and you won't eat before midnight. You also wish Jean would stop talking. Not only are you hungry, but you're tired, and all this talk about Fred's mother is very boring. Hey, there's a restaurant up ahead that doesn't look too bad. Why don't you suggest stopping there to eat instead of going to that other place?

Skit 3: Three Boys on Their Way Back to College After a Vacation at Home

Jerry: You and your friends Tony and Don are on your way back to college from your week's vacation. It was good to be home, but you're looking forward to going back to school to finish out the year. You have been driving for about 2½ hours, and are feeling a little stiff. It should be close to time for Tony to take his turn at the wheel. Oh boy...it looks like you're coming to a city. You didn't realize you would have to cope with city traffic. Hopefully, there will be signs to lead you *around* the city so you won't have to drive through it. It would be nice if Don would put away that dumb crossword puzzle and start looking at the road to help you get through this mess. And what is Tony doing in the back seat?

Don: It sure is terrific that Jerry has a car and can give you and Tony rides home from college at vacation time. It is much more fun making the trip with other people--traveling alone on the train is so boring. This crossword puzzle you've been working on for the past half hour is really tough. What's a nine-letter word for "Daily Reader" anyway? Jerry is pretty good at these things; maybe he can give you some help. Doing these things as a team usually works out better anyway.

Tony: Gee, it's only 11 o'clock. It seems as if the three of you have been driving for days. You won't get back to school until late this afternoon. Maybe you should try to take a nap--that always helps to make the time go faster. But before you do that, you think you'll have a little snack. Jerry's mother packed enough sandwiches and cookies for an army, and Don's mother sent along more fruit than your whole dorm could consume in a month. Let's see...what kind of sandwiches have we got here? Maybe somebody in the front seat would like something to eat too?

ACTIVITY #11

Mini-unit Topic: Understanding Driving Habits **Approximate Class Time:** 1-2 periods

Capsule Activity Description: Students perform science experiments which illustrate automobile driving safety considerations and issues.*

Goal:
To understand the scientific basis for some safety rules.

Concepts Treated:

- Safety belts protect drivers or passengers in a crash, but do a better job when both lap and shoulder belts are used.
- When a traffic light turns yellow, a decision has to be made about whether to stop or to go.
- Exhaust gases can kill.

ACTIVITY

The following science experiments illustrate different automobile driving safety problems. Some relate only to driving considerations, while others involve social issues. For example, the activity on yellow traffic lights (Number 2) introduces the issue of when and how citizens can take action to urge improvement or installation of traffic signals and signs to promote traffic safety. The experiment on carbon monoxide (Number 3) can be used to introduce discussion of whether regular automobile inspections should be required by law and should include a check on the condition of automobile mufflers.

You may want to consider enlisting the aid of a science teacher for some or all of these experiments.

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*These experiments were developed for this activity by Donald Bockler, Belmont, MA, a secondary school science teacher.

Evaluation:

Have students explain, orally or in writing, how the experiment they have just performed pertains to safety.

Sample Safety Experiments

Automobile Safety Belts

A student sits in the driver's seat of an automobile equipped with lap and shoulder seat belts. With both lap and shoulder belts on, the student lists the different parts of his/her body that can touch a solid part of the steering wheel and/or the dashboard if the car were to stop suddenly. Examples of these parts are: forehead, nose, teeth, chin, upper arm, shoulder, collarbone, wrist, waist, ankle, etc. Repeat this procedure using only the lap belt (buckle the shoulder belt behind the back if necessary). Repeat this a third time, using no seat belts at all. Students repeat the above procedure sitting in the back seat. Students then evaluate the function of safety belts in preventing bodily injury to the driver and passengers upon impact of a moving automobile.

Stopping-time for a Yellow Light

Students should time the duration of various yellow lights in town to the closest tenth of a second and then calculate the necessary times and distances required to stop an automobile approaching a stop light at different speeds. Minimum stopping distances at various speeds are shown in the following table:

mph	*Reaction Time Distance*	*Braking Distance*	*Total Distance*
10	11'	9'	20'
20	22'	23'	45'
30	33'	45'	78'
40	44'	81'	125'
50	55'	133'	188'
60	66'	206'	272'
70	77'	304'	381'

Students should measure the distances across the intersections at each yellow light timed and compare these distances with the total minimum stopping distances at various automobile speeds. The number of feet traveled during the duration of the yellow light can be calculated by the following formula:

$$\frac{\text{mph} \times 5280 \text{ feet}}{3600 \text{ seconds}} \times \text{Seconds of yellow light} = \text{Feet traveled}$$

*Effect of Carbon Monoxide (CO) Gas on Living Organisms**

These investigations should be performed in air-tight test chambers such as wide-mouth glass jars with reliable screw tops, glass aquaria, or bell jars. *A FUME HOOD SHOULD ALWAYS BE USED. DO NOT INHALE ANY OF THE GAS.* The gases are available in cylinders from different chemical supply houses. Students should set up several test chambers in which plants such as beans, radishes, white pine seedlings, pumpkin, oats or tobacco are growing. Small animals such as ants, fruit flies, or mosquitoes should be used, rather than larger animals. Different controlled amounts of CO gas should be introduced into the test chambers under the hood and effects should be observed after prolonged exposure for "days" with plants and "hours" with animals. The concentrations can be measured using a gas sampling kit such as those available from Eduquip or Ward's Supply House.

Concentrations should vary from 10 to 1000 ppm (parts per million). It should be noted that within 30 minutes, 1300 ppm is fatal to humans. Just 10 ppm CO can cause dizziness or nausea; 100 ppm are fairly common in tunnels and parking garages in major cities and levels as high as 400 ppm have been recorded in traffic jams. An eight-hour exposure to an atmosphere containing 80 ppm reduces the oxygen-carrying capacity of blood by about 15 percent, or more than the equivalent of one pint of blood. (These statistics have been taken from *Environmental Pollution* (William A. Andrews, ed.), Prentice-Hall, Inc., New Jersey: 1972.)

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*This experiment includes some parts that require killing plants or animals. You may feel that it is wrong, for ethical or educational reasons, to kill living things in a course designed to protect human life--or that it is wrong to do so at any time. If you feel this way, you may want simply to describe what the results of the experiment would be if you performed it, and then discuss with your students whether *they* feel such experiments are appropriate in a course such as yours or at any time.

ACTIVITY #12

Mini-unit Topic: Understanding Driving Habits

Approximate Class Time: 1-2 periods plus out-of-class time

Capsule Activity Description: Students observe safe and dangerous practices of people with whom they travel, keep a log of their observations, and discuss their observations.

Goal:

To identify common dangerous driving habits and to learn whether they are associated with particular groups of persons.

Concepts Treated:

- Bad driving habits are widespread.
- Even professional drivers often have bad driving habits.
- Some people are aware of their bad driving habits but do not change them.
- External circumstances (including riders) sometimes encourage bad driving habits.

ACTIVITY

In small groups, students develop a list of safe and unsafe driving habits to observe in the people with whom they travel during the following week, including friends, parents, other relatives, bus drivers, and taxi drivers. Examples of safe and unsafe practices they can observe may be found in Activity #9. Each student keeps a log of his or her observations, coded in such a way that the habits of different types of drivers can be distinguished, for example, red ink used for bus drivers, black ink for parents, yellow ink for friends. Students can also keep a record of the driving behavior of different types of persons--for example, men, women, teenagers, older people, handicapped persons.

At the end of the week, each student reports his or her observations to the small group, which then compiles a list of the safe and unsafe practices observed. These lists can be subdivided by each category of driver--bus drivers, men, women, and so on. Each group reports its summaries to the class and comparisons among groups are made. For example, students determine whether the unsafe practices observed in bus drivers were observed by every group. Discussion follows on one or more of the following questions:

1. If certain types of drivers--e.g., teenagers or bus drivers--engaged in more unsafe driving practices than certain other categories of drivers, what might account for these differences?

2. Can any general conclusions be drawn tentatively about whether women are safer drivers than men, adults safer than teenagers, or bus drivers safer than taxi drivers?

3. Are the drivers with unsafe habits aware of their dangerous driving practices? If so, why might they continue to drive dangerously despite that knowledge?

4. Is there anything students can do to encourage or motivate drivers with unsafe habits to drive more safely?

Evaluation:

Students are given a statement which stereotypes a category of drivers (e.g., "Women are terrible drivers because they're always so cautious" or "Teenage boys try to act tough and drive around recklessly"). Each student in writing or orally supports or criticizes the stereotype based on the observations the students made and reported.

Variations and Supplementary Activities:

Students can seek to determine whether people drive more dangerously depending on the time of day (e.g., during rush hour), the weather (e.g., in snow or rain), and whether there are passengers in the car (e.g., small children or friends).

Students can interview the people they observed to learn whether these drivers and passengers are aware of their safe and unsafe practices. This can include, for example, awareness of the safety implications of leaving keys in the car when not using it (joyriding leads to accidents) and of the dangers of modifying ("souping up") vehicles (oversize tires).

ACTIVITY #13

Mini-unit Topic: Understanding Driving Habits **Approximate Class Time:** 1½-2 periods

Capsule Activity Description: Students act out the parts in the script of "Fleming vs. Rondo--A Hearing." Then, without a script, the complete the hearing and try to reach a conclusion.

Goal:
To understand the probable causes of accidents and the contributions of the persons, automobiles, and the environment to the accidents.

Concepts Treated:

- On-ramps and off-ramps are very dangerous places.
- Hitchhikers often contribute to accidents.
- Cars don't stop "on a dime."
- At highway speeds, a moment's inattention could lead to an accident.
- It is difficult to assign a single cause to an accident.

ACTIVITY

Divide the class into groups of six students. Assign each student a part from the script (Spirit Masters #1 and #2). Each group acts out the script. When they come to the end of the script, students should continue in their roles and try to bring the hearing to a close and arrive at a settlement.

Before the students begin to act out their own "hearing," remind them that traffic accidents are usually a combination of three elements: man, machine, and environment. Human failures, including negligence, carelessness, and drinking abusively, contribute to many accidents. The automobile occasionally has defects in braking, steering, and other essential components which may cause or contribute to accidents, as well as poorly designed interior features which can cut or bruise occupants who are involved in accidents. Finally, the environment can foster crashes or increase their severity. For example, trees can obscure vision and faulty traffic signs can initiate accidents. Allow enough time for the groups to arrive at a resolution (approximately 10-15 minutes might well be sufficient).

When the group hearings are over, each hearing officer states the resolution arrived at or the reasons for an impasse. Then, as a class, discuss the number or complexity of issues involved; any difficulties or problems groups had conducting their hearings; who they (as students) felt was to blame for the accident and why; and how the accident might have been prevented.

Evaluation:

- Students write out their own resolution of the case and give reasons for their resolution.
- If a student feels he/she cannot resolve the question of responsibility, he must write down what he feels he lacks in order to come to a resolution.
- Students, on the basis of this accident, make suggestions for how future accidents at this interchange might be avoided.

Variations and Supplementary Activities:

If you have some gifted actors in the class, you may assign them the six parts of the scripted play and have them act the play in front of the rest of the class. When the actors come to the end of the script, divide the rest of the class into groups of six and have them carry on the hearing in their groups.

Students can investigate the extent to which accidents are caused by highway vandalism--theft and defacement of traffic signs and signals.

Students can investigate the role which poor road conditions (not including weather) play in accidents.

Students discuss the dangers of hitchhiking, in addition to the fact that it may cause accidents, as suggested in this play. Other reasons, for both the hitchhiker and the person who picks up a hitchhiker include being robbed, mugged, raped, and murdered. Students can research statistics on these risks by interviewing a police officer, having one come to the class to talk about hitchhiking, or checking newspaper files on statistics for such crimes in the local community, the state, or the nation.

MINI-UNIT 3

LEARNING ABOUT SAFETY BELTS

This may well be the single most important topic in any course on transportation safety. Safety belts save lives--and they should be worn by passengers as well as by drivers. Thus this topic is relevant to your students, no matter what their age. They will spend a good many hours each week riding in cars; most, if not all, of these cars will have safety belts. Children of any age can put on safety belts by themselves and peer pressure against doing so is relatively easy to overcome.

Among the concepts treated in this unit are

- There is considerable liklihood of anyone being in an automobile accident in his/her lifetime.
- Safety belts save lives and prevent injuries.
- In an accident it is better to be wearing a safety belt than not.
- Many reasons which people give for not wearing safety belts are unsound.

In Activity #43 in Mini-unit 11 students try to discover why people resist wearing safety belts. You might consider having some of your students research this question with the help of this activity.

MINI-UNIT 3 LESSON PLAN

Learning about safety belts

Activity #	*Activities*	*Class Time*
14[a]	DESCRIPTION: Students ask their parents why they do (or do not) wear safety belts. GOAL: To understand the reasons why some people do and others don't wear safety belts.	1 period
15 Spirit Master #3	DESCRIPTION: Class discusses how useful safety belts are in reducing injuries and fatalities in automobile accidents. GOAL: To appreciate the fact that safety belts do save lives and prevent injuries.	1-2 periods
16	DESCRIPTION: Students answer "Dear Abby" letters from classmates on safety belt problems and implement a plan to persuade a friend or relative to use safety belts. GOAL: To be able to persuade someone to wear safety belts.	1-2 periods

Total class time: 3-5 periods.

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[a] This activity also appears in Mini-unit 1.

ACTIVITY #14 *

Mini-unit Topic: Learning about Safety Belts **Approximate Class Time:** 1 period

Capsule Activity Description: Students ask their parents why they do (or do not) wear safety belts.*

Goal:

To understand the reasons why some people do and others don't wear safety belts.

Concepts Treated:

- Concern for safety is often a low priority item of people.
- Many people don't believe accidents happen to them.
- Many people resist regulations, even if they are made for their own benefit.

ACTIVITY

Ask your students whether their parents habitually (i.e., most of the time) wear safety belts when they drive. Also ask them whether their parents insist the students wear safety belts.

If, as will probably be the case, only about half of the parents wear safety belts or insist that their children wear them, discuss why so many people seem to be unconcerned with safety and take unnecessary risks by driving or riding without fastening safety belts. Have the class develop a list of likely reasons why people are unconcerned about automobile safety or safety belts.

Discuss whether, given the public's apparent lack of concern, the government should mandate the wearing of safety belts. In Canada, the Province of Ontario has a law that requires safety belts to be worn.

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*This activity also appears in Mini-unit 1.

ACTIVITY #15

Mini-unit Topic: Learning about Safety Belts

Approximate Class Time: 1-2 periods

Capsule Activity Description: Class discusses how useful safety belts are in reducing injuries and fatalities in automobile accidents.

Goal:

To appreciate the fact that safety belts do save lives and prevent injuries.

Concepts Treated:

- There is a high likelihood that any given motorist will be involved in an accident.
- Safety belts are effective in reducing injuries and deaths.
- Most accidents happen at slow speeds.
- In an accident, it is better to remain in the car than to be thrown from it.

ACTIVITY

Begin this activity by having students fill in the brief questionnaire about safety belt facts and figures which is provided on Spirit Master #3. Tabulate the answers on the chalkboard. These answers will indicate where the areas of greatest knowledge and ignorance are.

Depending on what the tabulation shows, have the class discuss one or more of the following topics:

- The value of safety belts for children
- The importance of safety belts for passengers
- Myths about safety belt use
- Importance of using shoulder harnesses
- How safety belts can prevent accidents from happening

During the discussion, you may want to provide additional information, especially factual material based on the pages at the end of this activity. These pages are taken from the brochure *Automobile Safety Belt Fact Book*, which can be obtained for 55¢ from

Superintendent of Documents
U.S. Government Printing Office
Washington, D.C. 20402
Stock Number 5003-0068
(Allow 10 weeks for delivery)

You may want to assign a student or group of students to study the pages (or the entire booklet) and report back to the class.

Evaluation:

Students in pairs role play a discussion between two people, one of whom maintains that safety belts contribute little or nothing to safety and sometimes are dangerous, while the other person tries to convince him differently.

Correct Answers to the Questionnaire on Spirit Master #3:

1. F
2. F
3. T
4. F
5. F
6. F
7. T
8. F
9. F
10. T
11. F
12. T
13. F

The Facts about Safety Belts*

Almost everybody has some conception of how seat belts contribute to personal safety. People know that belts reduce injuries caused by striking "hostile surfaces" in the car interior. (This is the so-called "second collision." The first collision occurs when the vehicle strikes, or is struck by, another object. The "second collision" occurs when the occupant of the vehicle is flung against the instrument panel, windshield, windows and side panels, roof, doorknobs, steering wheel, and so forth.

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*Excerpted from *Automobile Safety Belt Fact Book*. U.S. Department of Transportation, National Highway Traffic Safety Administration.

Incidentally, any one occupant can have several "second collisions" during a single accident, depending on how much he gets tossed around inside the car.) People are also aware that belts increase safety by holding the occupants inside the car, avoiding injury from "ejection."

People are generally less aware of other contributions. For example, in a collision, the occupants can fly into, or roll over, each other; by keeping them in place, belts reduce their chances of becoming another source of injury to each other. Belts can also help to prevent accidents. By keeping the driver firmly in place, they increase his control of the vehicle. By keeping the driver in a comfortable position, they can reduce fatigue and make driving a little safer. Children who are firmly buckled-in are less likely to distract the driver's attention from the problems of driving. And so it goes.

However, the average person's knowledge in this area is probably superficial and somewhat vague. Maybe that is one reason why belt usage is so low--people "sort of know" that belts help, but they don't know exactly what they do or how well they do it. The short paragraphs below should help in that regard. They quote or paraphrase information that appears more extensively elsewhere. (The source document that the paragraphs are based on can be found in *The Safety Belt Fact Book.)*

It *can* happen to us: *there is a high probability that the average motorist will* be involved in an accident someday soon.

> Within the next 16 seconds--and every 16 seconds thereafter--somebody will be injured in a motor vehicle accident. Every ten minutes, someone will be killed. By the end of this week, about 1,000 people will have been killed and 40,000 injured. Within a year, this will total about 2,050,000 deaths and injuries.
>
> One thousand Americans are killed every week in traffic accidents. Almost 10,000 are injured every day. Annually, this approximately equals the number of babies born in the United States yearly. Statistically, this means that "every American born from today forward may be killed or injured in an automobile crash."
>
> Of the 139 drivers "at fault" (that is, responsible for the accident) at least half had been drinking. Even good drivers are at the mercy of bad drivers.
>
> Many motorists believe that it is not necessary to use belts when traveling at lower speeds. This is not true.
>
> More than half of the accidents causing injury or death occur at speeds less than 40 miles per hour. In rural areas, one-half of the fatal accidents occur at speeds under 50 mph. Almost 50 percent of all rural accidents happen at speeds under 30 mph.

> In one statistical analysis of 28,000 accident cases, fatalities of "nonbelted" motorists occurred over the while speedscale, starting as low as 12 mph.

Yes, they *really* do work; here are *some research findings about the effectiveness of safety belts*

> If all passenger car occupants used lap belts, some 10,000 lives would be saved each year. Combination (lap/shoulder) belts would save some 20,000 lives.

In a study of 160 collisions,

> At least one occupant involved in each collision was wearing a combination (that is, lap and shoulder) belt. Ninety-six of the vehicles sustained heavy damage of the type that usually involves injury to the occupants. However 99 percent of the occupants using combination belts had either no injury, or only minor injury.

In a study of the effecitveness of the three-point harness in 28,000 accident cases

> Without the harness: fatal injuries throughout the whole range of accident speeds.
>
> With the harness: no deaths at speeds under 60 mph.
>
> The average injury-reducing effect of the harness was 40 percent to 90 percent.

From data on 14,261 occupants of passenger cars involved in rural crashes--2,359, or 16.5 percent, were wearing a lap belt (no shoulder restraint usage reported).

> In similar cases, the unbelted occupants were injured substantially more frequently and more severely than the belted one. In round figures, failure to use seat belt(s) increased injury risks as follows:
>
> - Of immediate death or severe injury...by 100 percent
> - Of more than trivial injury...by 70 percent
> - Of any injury...by 40 percent
>
> For all practical purposes, use of seat belts prevented ejection from the vehicle. This effect was estimated to account for about one-quarter of the above risk differentials. The remainder, or three-quarters of the risk differentials are attributed to the effect of seat belt(s) in (1) preventing injury entirely and (2) alleviating injury sustained within the vehicle.

The probability of death is almost five times greater when the motorist is thrown from the automobile ("ejected"). If ejection could be totally eliminated in automobile accidents, about 5000 to 6000 lives could be saved each year.

Seat belts are the most effective way to prevent ejection.

Even if all they did was prevent ejection, seat belts could reduce accident deaths by about 25 percent.

During an accident, people may also come into violent contact ("impact") with the car itself--doors and side panels, steering assemblies, instrument panels, and roofs. These "second and third collisions" are a major cause of death.

Lap belts permit the occupant's upper torso to "jackknife" forward and strike the car interior. However, the belts tend to reduce this impact to tolerable levels. By the time the belt-user begins to jackknife forward, the belt has already reduced the forces of impact. Shoulder belts prevent jackknifing, reducing injuries even further.

In a collision, children who are riding in the rear seat tend to become "airborne." They fly forward and are injured by impact with windshields, rear-view mirrors, instrument panels, heaters, etc. They also cause injury to the front-seat passengers by hurtling into them.

An adult in the rear seat tends to injure his face and head against the front seat. Legs are trapped under the front seat and broken. Also, an adult in the rear seat will hurtle forward, causing injury to front-seat passengers.

Safety belts can even keep accidents from happening. When seat belts keep the driver behind the wheel, everyone is safer.

Item: An unbelted driver took the corner too fast. He was thrown off balance and lost control of the car. A collision resulted.

Item: A car sideswiped a parked car. The driver (unbelted) lost control of the car, which swerved across the roadway where it collided with an oncoming car. Little if any injury resulted from the collision with the parked car, but serious injury occurred to occupants of both cars in the head-on collision.

Item: While crossing the Golden Gate Bridge, the right-front wheel of the bus ran over a cement block which had fallen onto the roadway. The impact threw the driver out of his seat, into the stairwell. Out of control, the bus ran over the side of the bridge. There was one survivor.

In short, by keeping the driver in place, in control of the car, seat belts can prevent accidents from happening and can keep mild accidents from turning into serious ones.

During an accident, children who are not belted become a hazard to everybody by becoming airborne and hurtling into other occupants. Unbelted children can also cause accidents. For example, a driver's attention was diverted when one of her children fell off the seat. She took her eyes off the road, swerved, and ran into a truck. The score:

Driver:	Minor bruises
Child 1:	Severe cut on head
Child 2:	Concussion
Child 3:	Near-fatal scull fracture
Child 4:	Severe head injuries

There are two points to observe: one, if all the children had been restrained, the accident would not have happened; two, if an accident does happen, seat belts protect the children from injury. The point is, would you rather have a sore shoulder or a skull fracture? *Some answers to the rumors about injuries caused by safety belts.*

> In the vast majority of accident cases, the seat belt presents no hazard to occupants except possibly in unusual and isolated instances. Under some extremely severe conditions, seat belts could cause serious injury; however, even so, the injured motorists would probably be even worse off without belts.
>
> If a car is hit from the side at the point where a motorist is sitting, he is likely to be injured whether he is or is not wearing a seat belt. However, this happens in only a small proportion of all accidents.

Based on a study of 382 accidents:

> In no case did a belt cause an injury that was more severe than the injury that would have resulted had a belt not been worn.

In an analysis of 28,000 accident cases:

> Injuries caused by the safety belt were reported in 34 cases for drivers and 25 cases for the front-seat passenger.

	Driver	*Front Seat Passengers*
Slight single rib fracture (no hospitalization; in two cases, belt was worn too loose)	10	10
Pain in chest and bruises	6	5
Slight to moderate fracture of chest bone	3	1
Bruises and soreness in lap area	3	2
Bruises and soreness in shoulder area	1	2
Fracture of collar bone	3	2
Slight superficial wound of neck	1	1
Soreness in back	2	
Slight injury, not defined		1
Multiple rib fracture	5	1

Most injuries reported to be caused by belts occurred in accidents in which occupants not wearing belts were seriously injured and in accidents at high speeds. Therefore, the injuries caused by the seat belts were very slight in comparison with the injuries sustained by motorists not wearing belts in the same accidents.

Myths and Facts about Safety Belt Use

The Myth: If I'm just going shopping, why bother? I don't need a belt driving around town at low speeds.

The Fact: Injury causing accidents occur at all speeds. Furthermore, the accident rate is lower on turnpikes and freeways than on city streets.

The Myth: What if the safety belt traps me in a burning or submerged automobile?

The Fact: Without a belt, the motorist may be dazed or stunned by the crash; this would increase the time it takes to get out of the car. With a belt, the motorist is more likely to be unhurt, alert, and capable of getting out quickly. Therefore, the belt will speed up, rather than slow down, the escape process.

The Myth: Many motorists have been "saved" by being thrown out of the car.

The Fact: There is virtually no situation in which people are not better off inside the car.

The forces in an accident are so great that a person ejected from an automobile can be flung 40 to 50 feet or more, from the car. (One body was found 150 feet from the car from which it had ejected.) Whether this distance is covered through the air, scraping along the ground, or both, it is highly likely to have serious results. In other cases, the car door is sprung, the motorist falls out, and the car rolls over and crushes him. Despite any emotional fantasies about "being thrown clear," sheer common sense--based on extensive statistics--say it's better to stay inside the car.

A station wagon carrying a family of six was struck from the rear. It ran off the road and rolled over. The mother flew out the door and was killed when her head hit a rock. Three of the children stayed in the car; all had broken bones, but all lived. The father stayed in the car and was not injured. When the police arrived, the father was frantically searching for the eighteen-month-old boy his wife had been holding on her lap. Half an hour later, they found the baby. Otherwise unharmed, he had drowned because he was hurled into six inches of water.

The probability of death is almost five times greater when the motorist is thrown from the automobile.

Safety Belt Use

Belt usage varies from trip to trip. The same person may wear a belt on one kind of trip, not wear it on another. For "short" trips--under 25 miles each way--the drivers report belt usage as follows:

Always use: 17 percent of the drivers

Sometimes use: 32 percent of the drivers

Never use: 51 percent of the drivers

For "longer" trips--26 to 150 miles each way:

Always use: 39 percent

Sometimes use: 26 percent

Never use: 35 percent

For "cross country" trips--over 150 miles each way:

Always use: 44 percent

Sometimes use: 28 percent

Never use: 28 percent

Ninety-five percent of all the trips made by these drivers were "short" trips: of every 20 trips, 19 were "short." Only 66 percent of the drivers go on "longer" trips, and only 33 percent make "cross country" trips. The drivers who use lap belts most often also tend to use shoulder belts most often. Similarly, drivers who use lap belts least tend to use shoulder belts least.

ACTIVITY #16

Mini-unit Topic: Learning about Safety Belts

Approximate Class Time: 1-2 periods plus out-of-class time

Capsule Activity Description: Students answer "Dear Abby" letters from classmates on safety belt problems and implement a plan to persuade a friend or relative to use safety belts.

Goal:

To be able to persuade someone to wear safety belts.

Concepts Treated:

- Many people don't like to wear safety belts.
- Many reasons people give for not wearing safety belts are unconvincing.
- Many people don't believe the factual evidence that safety belts save lives.

ACTIVITY

Students begin the activity by individually identifying a friend or relative whom they would like to induce to wear safety belts. Each student then writes a "Dear Abby" letter in which he or she states the problem and asks for advice on how to motivate this other person to wear safety belts. Sample letters appear at the end of the activity. Collect all the letters and duplicate them, providing each student with copies of the letters written by two to four other students. Each student then plays the part of Abby and writes responses to each letter, providing suggestions on how to go about persuading the person to use a safety belt. The responses are returned to the students to whom they apply.

Each student then develops a strategy by which to seek to persuade his or her friend or relative to wear safety belts. The strategy is written down. One or more weeks is then allowed for students to implement their plans; at the end of this time they report their results to the class. Particular attention is paid to the motivational techniques which seemed to work best and to the students' own feelings as they tried to persuade their friends and relatives. The activity concludes with a discussion of whether those methods which worked could be publicized and built into the government's campaign to promote safety belt use.

Two special considerations must be dealt with in conducting this activity:

Since it is likely that a majority of students in the class themselves do not use safety belts, it may be uncomfortable or hypocritical for them to try to persuade others to use them. One solution to this problem is for the students themselves to start wearing safety belts at least for the duration of the activity.

It may be unwise to engage students or some students in school activities which involve attempts to persuade parents (or even friends and other relatives) to adopt safety practices which are being recommended in class. To overcome the sensitivity parents may have to pressures they may feel are being stimulated by the school to interfere with their private lives, you can take these precautions:

Indicate to the students that the activity is voluntary, and that they should not try to convince anyone else to wear seat belts unless they themselves are convinced of the appropriateness of their actions, or are convinced that it is important to learn how people can be motivated to change their behavior, or are convinced that it is an important learning experience for them to see how they handle and react to a real life situation in which they try to motivate others to change their behavior.

Evaluation Method:

The letters that the students write.

Variations and Supplementary Activities:

Students can conduct the activity only by responding to the sample "Dear Abby" letters provided on the following pages and comparing their responses.

Students can rewrite the "Dear Abby" letters provided into story completion exercises which other students complete. Students can also develop story completion exercises from scratch around a variety of interpersonal safety issues.

Students can mail one of their letters to the local newspaper and evaluate the newspaper's ("Abby's") response.

Sample "Dear Abby" Letters

Dear Abby:

My mother and father make me wear my safety belts all the time, but I've noticed that *they* don't wear them whenever they drive someplace without me or my brother and sister. I don't think this is fair, and I'm also concerned that if they get into an accident, they'll get hurt. What can I do to make them wear safety belts?

Signed,

Baffled

Dear Abby:

My wife never wears her safety belt. I've talked to her about it now and then, pointing out how people who wear them are not hurt as badly and get killed less often when they have accidents than people who don't. She used to say it was too much of a nuisance to wear them and they wrinkled her clothing. We haven't talked about it in over a year now, but last week her mother was in a car accident in which she was badly cut and broke her ankle. She was not wearing a safety belt. I'm afraid that sooner or later my wife will be in an accident and get hurt. What can I do to persuade her to wear safety belts?

Signed

Nervous

Dear Abby:

My husband (boyfriend) never wears his safety belt. He says he doesn't believe all the evidence the government has "fed us" about how they save lives and reduce injuries. He says you can't trust the government to tell the public the truth. He used to get very angry when I asked him to wear them, saying that the government has no business trying to make the public do things it doesn't want to do. He says it's up to the people to make their own decisions about whether to wear a safety belt, get drunk, or smoke marijuana. I'd like to get him to wear the belt because he's a pretty bad driver sometimes and has already been in two accidents in the past year, although fortunately he wasn't hurt. What can I do to persuade him to use his safety belt?

Signed

Ataloss

New letters can be developed by altering

- The reasons given for not wanting to wear safety belts
- The reasons given for wanting the other person to use safety belts
- The relationship between the persons involved
- The safety (other than safety belts) involved

MINI-UNIT 4

DRINKING AND DRIVING

Whereas the previous mini-unit dealt with what is perhaps the single most important step that can be taken to make driving safer, use of safety belts, this mini-unit deals with the most important factor in serious and fatal automobile accidents, alcohol.

Though most students at the middle school or junior high school level are still too young to drive, almost all of them will soon be driving and many of them will also be drinking. It is not too early, therefore, to acquaint them with the effects of alcohol on driving safety. Furthermore, even as nondrivers and nondrinkers, many of your students will be faced with situations where they are asked to ride as passengers in a car about to be driven by a person who has been drinking excessively and they need to learn how to protect themselves in such a situation.

Major concepts treated in this unit, therefore, are

- Alcohol is involved in many accidents, particularly fatal ones.
- Alcohol poses special dangers for teenagers.
- Many teenagers choose not to drink.
- It is difficult to persuade a driver who has had too much to drink not to drive.
- The combination of drinking and driving poses some moral dilemmas.

If you or your students feel the need to study the problems of drinking and driving more extensively, the bibliography provides many works that may be consulted.

MINI-UNIT 4 LESSON PLAN

Drinking and driving

Activity #	*Activities*	*Class Time*
17[a] Spirit Master #3	DESCRIPTION: Students learn the facts about drinking and driving and discuss them. GOAL: To understand how alcohol affects people and makes driving more dangerous for them.	1 period
18	DESCRIPTION: Students discuss best course(s) of action if a friend or relative is about to ride with a driver who has been drinking excessively. GOAL: To be able to persuade someone not to ride with an intoxicated driver.	1-1½ periods
19	DESCRIPTION: Students role play situation in which a friend who has been drinking excessively is about to drive. GOAL: To understand the feelings of someone who has been drinking and who gets advice from sober people.	1 period

Total Class
Time: 3-3½
periods.

[a] Appears also in Mini-unit 1.

ACTIVITY #17*

Mini-unit Topic: Drinking and Driving

Approximate Class Time: 1 period

Capsule Activity Description: Students learn the facts about drinking and driving and discuss them.*

Goal:

To understand how alcohol affects people and makes driving more dangerous for them.

Concepts Treated:

- Alcohol affects reaction time of drivers.
- Alcohol increases the likelihood of accidents.
- Alcohol is involved in 50 percent of all fatal traffic accidents.
- Blood alcohol content is an objective measure of whether a driver was "under the influence."
- Body weight affects alcohol's effect on the drinker.
- Teenagers are more likely than other age groups to be adversely affected in their driving by drinking.
- Many teenagers choose not to drink.

ACTIVITY

Begin this activity by having students take a brief quiz to evaluate their grasp of the facts about drinking and driving. A sample quiz is provided on Spirit Master #4.

Tabulate the answers on the chalkboard and then pass out duplicated copies of the information about drinking and driving provided at the end of Activity #3 and have students read and then discuss the information provided, comparing it with their answers to the questionnaire. Distribute copies of one of the brochures suggested in the bibliography and have students read and discuss the data provided. Use the information provided as the basis of a lecture about drinking and driving. You should guide the discussion of the class so that it concentrates on a specific aspect of the drinker-driver problem, such as

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*This activity appears also in Mini-unit 1.

- The effects of alcohol abuse on driving ability
- The relationship between alcohol use and traffic accidents
- The special dangers of teenage alcohol abuse and driving
- Myths about drinking's effects on driving
- How to feel comfortable among drinking friends if your choice is *not* to drink

If the class shows and maintains interest, you can guide the discussion to related issues, such as

- Why do people drink excessively when they know they will be driving?
- What are the excuses some drunk or impaired people use to convince themselves they are capable of driving safely?
- Should friends or relatives try to convince each other not to drive after drinking excessively or not to ride with drivers who are impaired?
- Are there ways people can be motivated not to drive when impaired, not to drink excessively when they will be driving, and not to ride with drivers who are impaired?

Answers to Sample Quiz on Spirit Master #4:

1. c
2. d
3. c
4. d
5. c
6. a
7. c
8. d
9. d
10. b
11. c
12. h
13. b
14. d

Evaluation Method:

The role play in Activity #19 can be used as an evaluation.

ACTIVITY #18

Mini-unit Topic: Drinking and Driving   Approximate Class Time: 1-½ periods

Capsule Activity Description: Students discuss best course(s) of action if a friend or relative is about to ride with a driver who has been drinking excessively.

Goal:

To be able to persuade someone not to ride with an intoxicated driver.

Concepts Treated:

- It is extremely difficult to dissuade someone from doing something he wants to.
- Persuasion often has to be gentle and indirect.
- Persuasion sometimes does not work.

ACTIVITY

Students write briefly (½-1 page) what they should do and what they would do in one or more situations in which a friend or relative is about to ride with a driver who has been drinking excessively. See the next page for sample scenarios.

During the following class period, students break into small groups and are given written instructions to discuss

- What they *should* do, how, and why
- What they *would* do, how, and why
- How any discrepancy between students would and should do can be resolved

Each group reports its conclusions to class and responds to questions and comments from class and teacher.

Evaluation Method:

Students role play the scenarios, or others which they themselves create.

Variations and Supplementary Activities:

Activity can be conducted as a class discussion or written homework assignment.

Students can role play the scenarios.

ACTIVITY #19

Mini-unit Topic: Drinking and Driving **Approximate Class Time:** 1 period

Capsule Activity Description: Students role play situation in which a friend who has been drinking excessively is about to drive.

Goal:

To understand the feelings of someone who has been drinking and who gets advice from sober people.

Concepts Treated:

- Many drivers become offended when their ability to drive is questioned.
- In many situations there is a conflict between one's duty to oneself and one's duty to a friend.
- A drinking driver may hurt not only himself but many other people.

ACTIVITY

Students role play confrontation between friends, one of whom has been drinking excessively and is about to drive.

Students begin by reading the scenario on the following page, which sets the scene for the role play. Students then role play the situation, using the role profiles found on the page after the scenario.

At the end of each role play, participants read their role profiles to the class and discuss the feelings they experienced while acting. Other students discuss how they might have responded to the situation. Teacher adds own comments.

Evaluation Method:

Students create situation in story form in which a person who has been drinking excessively is about to drive, but is confronted by a friend. However, students do not conclude the story, but rather stop at the point where the friend has the opportunity to intervene. Then, students exchange stories and write two different endings to the other student's story: one how it would probably end, and one, how it should end.

Sample Scenarios

You are at a party and your best friend has just accepted a ride home from another friend who is drunk. No one else lives near him except a boy he dislikes for having stolen his girlfriend last year. You have no license and no money and you know your friend doesn't have much money. He lives 2½ miles away. It is a cold winter night, around 11:30 p.m. What, if anything, should you do? Why? What, if anything, would you do? Why?

Your 17-year-old sister has a date with her boyfriend. You just let him in the door and he's obviously drunk since he knocked over a lamp trying to sit down and has talked only nonsense. You go upstairs and tell your sister he's drunk and she tells you to mind your own business. You know they are going in his car to a party way on the other side of town. Your parents are next door with friends. What, if anything, should you do? Why? What, if anything, would you do? Why?

Your father has been drinking heavily and is about to drive your mother to do some grocery shopping. It is already dark and the roads are still icy from the previous day's snowstorm. She has no license and there is no food in the refrigerator. What, if anything, should you do? Why? What, if anything, would you do? (or: what would you *want* to do?) Why?

Scenarios can be altered by varying such factors as

- How drunk the driver is
- The relationships between the three people involved
- How badly the passenger needs the ride

Sample Role Profiles

Friend. Your best friend is pretty drunk and is ready to drive his girl home. You feel he's in no condition to drive and even if he doesn't hurt himself, his girl, or someone else, he's liable to get arrested and lose his license. But you know you're going to have a tough time convincing him not to drive when he's with his girl. She'd like him not to drive, but is afraid to say so. She doesn't have a driver's license, either. In addition, he has no money to take a taxi and there are no buses around this neighborhood.

Girlfriend. Your boyfriend has been drinking quite a bit at this party, something he usually doesn't do. You've kidded him about it, trying to get him to slow down, but he won't take the hint. Now he's ready to drive you home. You'd rather he didn't drive but you're afraid to tell him not to, especially since you don't know how to drive.

Drinking driver. You are with your girlfriend at a party and have had quite a bit to drink, but you're not too drunk to drive her home. Why, she doesn't even have a license to drive. Besides, she lives only four miles away and the road should be pretty empty at 11:00 p.m.

Friend. You and four friends have been drinking in the park. Three of them start walking home, but the one who owns the car and is really drunk stays to drink a little longer with you. He (or she) is going to insist on driving you home because he won't admit he can't hold his liquor and, anyway, seems to get his kicks out of doing risky things. You know that if you refuse to go with him he will still try to drive home. Now that it's 11:00 p.m. he starts to stagger up to leave.

Drinking driver. You've been drinking in the park with four friends. Three have started walking home and now you're almost ready to give the fourth one a ride home. You've had quite a bit to drink, but it's a challenge, you feel, to try to drive when you're drunk. You start to get up to go home, and you'll insist on giving your friend a lift--it's more fun driving with someone when you're drunk. Your friend is usually a sissy and you want to help him (her) get over that.

New role profiles can be created by varying

- The amount drunk by the driver
- The relationship between the driver and the friend
- The reasons the driver wants to drive
- The extent to which the driver knows he is incapacitated
- The amount of money the driver has, the distance to his home, and the availability of other forms of transportation

MINI-UNIT 5

BUYING A CAR

Within a few years, some of your students will be thinking about buying their first car. Already they are exposed to the advertising slogans of car manufacturers as they watch television or read magazines. Few of these slogans, however, point out the safety considerations which a purchaser should have in mind as he tries to decide what kind of car to buy. Indeed, just pointing out that safety is something that the potential car buyer should keep in mind, together with power, looks, price, etc. may be a service.

In the larger context of consumer education, students need to learn what it means to be a careful shopper and to overcome any hesitations they might have about making careful inquiries about any product they are thinking of buying.

Major concepts treated include

- There are some basic safety items that a car should have.
- Safety is but one of many competing factors that go into a decision to buy a car.
- "Let the buyer beware" means not being swayed by glossy advertisements.
- To get information, consumers usually have to ask questions.

Because cars are so dear to most teenagers' hearts and because so many look forward to buying their first car, this unit should be very attractive to your students.

MINI-UNIT 5 LESSON PLAN

Buying a car

Activity #	*Activities*	*Class Time*
20	DESCRIPTION: Students discuss the safety considerations to keep in mind when buying a new or used automobile. GOAL: To know which features make a car safer and which merely add convenience.	½-1 period
21[a]	DESCRIPTION: Students discuss the importance which safety considerations should have when buying a vehicle primarily for another purpose. GOAL: To understand the different reasons which people have for buying cars.	1 period
22	DESCRIPTION: Students discuss embarrassment at carefully examining an automobile for safety features before purchasing it. GOAL: To overcome feelings of embarrassment at being a careful shopper.	½-1 period
23	DESCRIPTION: Students analyze automobile advertisements and discuss why safety considerations are not usually included in the sales "pitch." GOAL: To discover what the sellers of automobiles consider to be the primary motives of Americans for buying cars.	1 period

Total Class
Time: 3-4
periods.

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[a] This activity also appears in Mini-unit 1.

ACTIVITY #20

Mini-unit Topic: Buying a Car

Approximate Class Time: ½-1 period

Capsule Activity Description: Students discuss the safety considerations to keep in mind when buying a new or used automobile.

Goal:

To know which features make a car safer and which merely add convenience.

Concepts Treated:

- A used car requires more attention to safety aspects than a new one.
- Some optional equipment contributes to safety, but some does not.
- Basic safety items on a car are brakes, tires, windshield wipers, headlights and brake lights, turn signals, side mirrors, safety belts.
- The National Highway Traffic Safety Administration can help identify automobile models that have been recalled by manufacturers because they have safety-related defects that require repairs.

ACTIVITY

The class breaks into small groups and each group is instructed to develop a list of considerations the purchaser of an automobile should have in mind in order to buy a safe car. After developing lists, groups present them to the class and a master list is prepared. Considerations which are peculiar to the purchase of secondhand cars should be singled out with an asterisk or other identifying mark. You can supplement the students' suggestions with the following safety considerations.

Size and weight. Given similar designs, heavier cars may provide greater protection to occupants in car-to-car crashes than do lighter cars. It is expected that the average weight of automobiles will decline substantially in future years, as a result of national efforts to conserve energy. This change will make weight a less relevant safety factor.

Optional equipment. Examples of some items that may contribute to safe driving are high quality tires (radial, bias-ply, and bias-belted), day/night rear-view mirror, rear window defroster or defogger, and remote-control driver's side outside mirror.

Visibility. Are there blind spots which make it difficult for the driver to see the road, out the back window, or the dashboard, because of the way the automobile is built?

Brakes and tires. If the car is used, are these in prime condition, or are repairs or replacements needed?

Defects. For used cars, a purchaser should check to learn whether the model she or he is considering buying has been recalled by the manufacturer because of a safety-related defect--*and* whether the particular car itself has, in fact, been taken to the dealer for the required repairs. (Forty percent of all recalled cars are not taken back to a dealer for repairs.) The procedure for checking is simple: Telephone (at no charge) the U.S. Department of Transportation's National Highway Traffic Safety Administration (NHTSA). NHTSA can tell you immediately whether the model has ever been recalled because of a safety-related defect. If it has, NHTSA will send you, by return mail, a postal form on which you enter your name, address, and vehicle identification number. Send the form to the appropriate manufacturer, who will then notify you whether the particular car you are considering has been properly repaired to eliminate the safety-related defect. (To call NHTSA, dial its toll-free Hotline number: (800) 424-9393. NHTSA's mail address is Office of Consumer Services, NHTSA, Washington, D.C. 20590.)

Owner's manual. Make sure it is provided with used car.

Safety record. Research the record of this make and model in past years.

Prior history (for used cars). Ask for the record of past safety inspections, repairs, accidents.

Safety belts. Check to see that car has three-point safety belts and that they can be adjusted to fit comfortably.

Brakes. Check consumer information sources to learn which combination of options is best for stopping distance (e.g. disc brake/drum brake/power assisted brake). Note: power brakes do not assure better braking in terms of stopping distance or control than do conventional brakes. On the contrary, when there is a failure in the power boost system, power brakes require much greater foot pressure to use than do conventional brakes.

Odometer. If the car is a used one, ask for a written mileage disclosure statement. The federal odometer law (part of the Motor Vehicle Information and Cost Savings Act) requires that the seller must provide the buyer with a written statement of the registered mileage. For complete details on this requirement, write to NHTSA (at the above address) for a free copy of the fact sheet "Consumer Protection Under the New Antitampering Odometer Law."

After compiling a complete list the class breaks into small groups again and discusses the following questions:

1. How can purchasers determine how safe the cars are which they are considering buying (e.g., read appropriate literature; test drive the vehicle, testing for brakes, steering and visibility in particular, and fit of safety belts; take car to an independent mechanic for inspection)?
2. What sacrifices might a purchaser have to make in order to buy the safest possible car (e.g., additional costs, appearance, speed, power)?
3. Few people consider safety when buying a car. Why not? Is it possible to motivate people to include safety considerations as one of their criteria in selecting what car to buy? How?

After discussions, the groups present results to class and comment on each other's presentations.

Evaluation:

Students are given the description of a new or used automobile and in writing or orally explain whether they would purchase it based on safety considerations alone.

Variation and Supplementary Activity:

Students can interview driver education teachers or invite them to class to discuss what safety considerations should be included in the decision to buy a car.

ACTIVITY #21*

Mini-unit Topic: Buying a Car

Approximate Class Time: 1 period

Capsule Activity Description: Students discuss the importance which safety considerations should have when buying a vehicle primarily for another purpose.*

Goal:

To understand the different reasons which people have for buying cars.

Concepts Treated:

- For many people, a car is more than mere transportation.
- An automobile has multiple uses.
- Over the years, a person experiences changing needs and desires concerning automobiles.
- Purchase of an automobile often involves compromises between several different wants.

ACTIVITY

Students, in small groups, discuss whether and how important safety should be considered when buying a car for another purpose. Different groups can discuss the importance safety should have when buying these vehicles: a sports car (primarily for fun); a pickup truck (primarily for carrying goods); a minicar (primarily for fuel economy); or a motor home or vacation trailer (primarily for recreation).

Students should consider that most vehicles will be used by more than one person (such as husband and wife). Among the points they should consider are these:

- Will all users be able to use the vehicle safely and properly?
- Are the upkeep costs such that the owners will be able to afford maintenance and service necessary for safety?

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*This activity also appears in Mini-unit 1.

- Is a fast vehicle safer or less safe than a slow one?

- Is a new vehicle safer or less safe than a used one?

Groups report their conclusions to the class and respond to comments and questions from students. Compile on the chalkboard a list of the purchase criteria the groups have come up with and arrive at a class consensus on what they should be; such as, use for automobile, necessary safety features, income considerations.

Evaluation:

Students write "Dear Abby" letters from someone who plans to buy an automobile. Students exchange letters and each student responds to one student's letter in terms of what kind of car should be purchased and why, from a safety point of view.

Alternatively, students can reply to the following letter:

> Dear Abby:
>
> My husband and I need a new car, but we can't agree on what to buy. For the past 30 years we have owned a station wagon of one kind or another, but now our children are grown and married, and live with their families in other states. We don't really need a big car like that anymore. My husband is going to retire next year so we want to buy a car soon. The problem is he wants to buy a second-hand pickup truck so he can put a camper on the back of it and go fishing with the boys. He doesn't think we need a new car or even a *new* truck.
>
> I want a Ferrari. For 30 years I have been carting kids and bundles around in a big box with wheels; I want a fun car for a change. Anyway, when we visit the kids we could get there much faster in a sports car; it would take forever in an old pickup truck.
>
> My husband doesn't think it would be safe for me to drive a Ferrari; he thinks I can't handle the speed. I think it wouldn't be safe for me to drive a pickup truck; I don't think I could handle such a clumsy vehicle.
>
> Our marriage is on the rocks because of this. How can my husband and I resolve our problem?
>
> Sincerely,
>
> "Pick-me-up-a-sports-car"

Variations and Supplementary Activities:

Students can choose an "ideal" automobile from a safety point of view and then discuss and defend their selection criteria.

Students can interview automobile salespersons on what kinds of cars most customers buy and whether safety is a sales feature.

ACTIVITY #22

Mini-unit Topic: Buying a Car

Approximate Class Time: ½-1 period

Capsule Activity Description: Students discuss embarrassment at carefully examining an automobile for safety features before purchasing it.

Goal:

To overcome feelings of embarrassment at being a careful shopper.

Concepts Treated:

- Many people are nervous when dealing with strangers.
- Some people use others' embarrassment to gain an advantage.
- It is possible to put your own emotions to good use in an interpersonal relationship.
- Consumers have a right to examine something they want to buy.
- "Let the buyer beware."

ACTIVITY

Students write a brief description of any experience in which they intended to purchase a product but felt embarrassed or nervous about examining it carefully before buying. Students include in their account whether they did examine it and how carefully; how the salesperson responded and why; whether they found any defects or unwanted or missing parts; what they did about any defects or unwanted or missing parts; and whether they purchased it and why.

Students break into small groups and are given written instructions to discuss

1. All the reasons they were embarrassed or nervous--for example, concern about the salesperson getting angry; their revealing ignorance about the quality of the product, or about what they want in the product, or whether they really want to buy the product at all;

other people waiting for service getting angry at the delay; other influences other customers may have on a potential buyer; their need for the product regardless of defects (e.g., because of the shortage of an item); and not knowing what to do if a defect or missing part is discovered.

2. How the salesperson responded--with anger, annoyance, consideration, additional information, refusal to continue to serve the customer.

3. Methods customers can use to avoid feeling embarrassed or be motivated to examine products carefully despite their embarrassment, such as knowing in advance exactly what to examine on the car before entering the showroom or second-hand car lot; knowing exactly what kind of automobile one wants to buy; planning in advance what to do if a safety defect is found or a safety factor or option is not available (e.g., demand a discount, demand a defect be repaired or the missing item included, demand to see an entirely different type of car, and leave to visit another dealer); and identifying methods by which to exert influence over salespersons (e.g., asking for the supervisor, indicating you might shop at a competitor's store, and indicating you might write the manufacturer or distributor).

The groups report their conclusions to the class and respond to questions and comments from the class and the teacher.

Evaluation:

Students can role play a meeting between a potential buyer and a salesperson.

Variations and Supplementary Activities:

Activity should be preceded by a study of what safety defects and features to look for in purchasing a car.

Activity can be a class discussion.

ACTIVITY #23

Mini-unit Topic: Buying a Car Approximate Class Time: 1 period

Capsule Activity Description: Students analyze automobile advertisements and discuss why safety considerations are not usually included in the sales "pitch."

Goal:

To discover what the sellers of automobiles consider to be the primary movtives of Americans for buying cars.

Concepts Treated:

- Cars are sold through the use of a variety of different sales appeals.
- Cars are bought for a variety of reasons.
- All features of a car, including safety features, cost money.
- A safe car can also be powerful, good-looking, fast, and fun to drive.

ACTIVITY

Prior to the activity, students are instructed to bring to class different automobile advertisements; including, if possible, tape recordings of television and radio advertisements, as well as magazine and newspaper advertisements. Class then breaks into small groups to analyze the advertisements. Each group examines the same three to six advertisements, answering the following questions:

1. What are the major methods by which the companies are seeking to persuade the public to buy their cars? (style? economy? power? sex appeal? safety?)
2. How important are safety features as an inducement? What specific safety pitches do the ads make?
3. Do safety features take away from other features or can they be combined with others?

4. If safety is not a major method by which automobile companies try to persuade the public to buy their cars, why is so little stress placed on this aspect of driving? Is there little basis for competition between car companies in terms of safety features? Is the public not motivated to choose cars on the basis of safety considerations? Do automobile manufacturers want to avoid competing with one another to provide expensive safety features?

5. If car companies competed to sell cars primarily on the basis of safety claims, would they sell as many cars? If one company tried to sell a car on the basis of the superior safety features and another tried to sell a basically similar car touting its speed, styling, or economy, which car would the public be more likely to buy? Why?

Small groups present their conclusions to the class and check for similarities and differences. General discussion follows on why the public seems more concerned about styling, power, and economy in their cars than in safety features. Given these priorities, can anything be done to change the criteria Americans use for deciding what automobiles to buy?

Evaluation:

Students write their own advertisements for a car in which the stress is on that model's superior safety features.

Variations and Supplementary Activities:

Students in small groups develop their own advertisements for automobiles and compete on a basis of safety features. Each group can develop a different advertisement, and students from another class can "shop" among the different groups to "purchase" the cars which appeal to them the most.

Students can read Ralph Nader's *Unsafe at Any Speed* and evaluate his claim that the automobile industry has engaged in collusion to avoid competing on the basis of safety features.

Students can debate the topic, "Resolved that the automobile industry should take upon itself the responsibility for educating the American public to the importance of considering safety features when purchasing a car."

MINI-UNIT 6

LEARNING ABOUT PEDESTRIAN SAFETY

Most people don't think of walking as a mode of transportation; it's just something we do. However, when we walk in places where we compete with other modes of transportation, it becomes clear that safety considerations apply. Most of the competition is between cars and pedestrians, either at intersections or on roads where there are no sidewalks. In both cases, the purposes of cars and of pedestrians are in conflict: at an intersection, cars want to proceed along the street, while pedestrians want to go across it; on roads, cars want to use the maximum available space for reasons of safety, while walkers want to claim some part of the width of the road for themselves.

Thus, it is important for pedestrians to identify safe and unsafe ways of walking, particularly since in any accident between car and pedestrian, the latter is likely to suffer much more severely than the former. At the same time, the automobile driver must be aware of the need to exercise caution toward pedestrians, since the driver has at his command a vehicle weighing two tons or more which can become lethal to a pedestrian.

Major concepts explored include

- The major hazards that pedestrians face arise when cars can't see them properly or when they appear in unexpected places or at unexpected times.
- Sometimes (unfortunately) it seems to be more fun to walk or play unsafely than safely.

Research Activity #45 (attitudes of drivers and pedestrians toward one another) can be used for enrichment with this unit.

MINI-UNIT 6 LESSON PLAN

Learning about pedestrian safety

Activity #	*Activities*	*Class Time*
24 Spirit Master #5	DESCRIPTION: Students identify pedestrian hazards and formulate appropriate community countermeasures to enhance pedestrian safety. GOAL: To know what pedestrian hazards are and how to cope with them.	1½-2 periods
25	DESCRIPTION: Students explore ways to cope with pressures to walk and play unsafely by responding to hypothetical letters from various age students in situations of conflict about walking and playing. GOAL: To become aware of peer pressure to behave unsafely and to be able to resist that pressure.	1 period
26[a] Spirit Master #6	DESCRIPTION: Students discuss what restrictions they would set for their children on walking and playing safely. GOAL: To understand what are reasonable rules of safety for children of different ages.	1 period
27	DESCRIPTION: Students evaluate a pedestrian accident and determine the causes and responsibility. GOAL: To understand what is the most important cause of a pedestrian accident that had several causal factors.	1-2 periods

[a] Appears also in Mini-unit 1.

Total Class Time: 4½-6 periods.

ACTIVITY #24

Mini-unit Topic: Learning About Pedestrian Safety

Approximate Class Time: 1½-2 periods, plus out-of-class time

Capsule Activity Description: Students identify pedestrian hazards and formulate appropriate community countermeasures to enhance pedestrian safety.

Goal:

To know what pedestrian hazards are and how to cope with them.

Concepts Treated:

- Being a pedestrian includes coping with hazards.
- Some hazards are peculiar to intersections, some to midblock locations.
- Some pedestrian hazards are related to other activities, such as making purchases from a street vendor.
- Some age groups present a higher pedestrian risk than others.

ACTIVITY

Write this statement on the chalkboard:

In 1973, approximately 400,000 pedestrians were involved in accidents with motor vehicles. About 10,000 of the accidents resulted in pedestrian fatalities, with 64 percent of these fatalities occurring in urban areas.

As a class discuss some or all of the following issues:

- Do you ever think of yourself as a pedestrian? What responsibilities do you have as a pedestrian?
- Do you ever worry about your safety as a pedestrian? Why or why not?
- Does a pedestrian have any kind of protection from harm? What protects a pedestrian best?

Brainstorm for dangerous pedestrian practices that students or others engage in. List them on the chalkboard. Some practices that might be mentioned are darting into the street without looking, not crossing at the crosswalk or intersection, standing in street rather than on the sidewalk while waiting to cross the street, not paying attention while walking (e.g., talking to friend, reading newspaper), walking at night wearing dark clothing, running rather than walking across street, getting caught in middle of street when traffic starts up, and being upset, drunk, or on drugs while walking.

Using the material attached, relate those practices mentioned by the students to the eight most frequently occurring pedestrian accidents.

To find a solution or solutions for improving pedestrian safety, students first observe pedestrian habits and practices at various points in the community. Divide the class into pairs and pass out Table 1 which outlines the characteristics of each accident type. Using this table and the list on the chalkboard as guides, students make up an observation sheet or adapt the one provided as Spirit Master #5.

Working together, students choose a location from which to observe pedestrian movement at different times over a period of a few days. When the information has been gathered, students determine what precautions pedestrians should be taught or alerted to, to ensure their safety, and what the community can do to further the public's safety while walking.

Students present their findings and conclusions to the class in a form similar to that in Table 2 which are then compared to the pedestrian countermeasures and expected outcomes of Table 2. The countermeasures are then assessed and the best ones for the local community are chosen and outlined.

Evaluation:

Students make up a pedestrian safety brochure for their community.

Variations and Supplementary Activities:

Students pick a particular age group or population to observe and report on.

Students can focus on the dangers of playing in railway yards and around railroad crossings.

Students research the existence of anti-jaywalking laws and if they are enforced.

PEDESTRIAN HAZARDS*

Eight frequently reported types of accident account for over 55 percent of the pedestrian accidents studied. A brief description of the eight types of pedestrian accidents follows:

Dart-out (First Half). A pedestrian, not in an intersection crosswalk, appears suddenly from the roadside. His quick appearance and short time exposure to the driver are the critical factors. The pedestrian often may be running, and parked cars often obstruct vision but neither need be present if the basic condition of sudden appearance to the driver's view is met. The prime example of the dart-out is a school-age child running out from between parked cars on his own block, in a residential area in the center city in the afternoon after school. He heads straight across the relatively narrow street, looking where he is going and is struck less than halfway across. The driver, traveling at a normal rate of speed, did not have enough time to stop after detecting the child.

Dart-out (Second Half). This is the same as the dart-out described for the first half above, except that the pedestrian covers half of a normal crossing before being struck. The distinction was made because of the possible differences in the opportunities or problems relative to driver detection and recognition of danger if the roadway is clear. However, this type was assigned even if traffic obscured the driver's vision. It may be used even if the pedestrian crosses a medium-size median strip of a boulevard.

Intersection Dash. This category covers cases similar to dart-out with regard to pedestrian exposure to view, but the incident occurs in or near a marked or unmarked crosswalk at an intersection. Cases are included if the pedestrian is running across the intersection even though his exposure to possible driver view is not extremely short. (His speed will, in effect, limit his actual exposure to the driver.)

Vehicle Turn/Merge With Attention Conflict. The driver is turning into or merging with traffic; the situation is such that he attends to auto traffic in one direction and hits the pedestrian who is in a different direction from his attention. A critical feature is that the attention conflict is built into the situation. Usually the driver directs his attention in a given direction to determine an acceptable gap into which he will enter.

Pedestrian Strikes Vehicle. This classification covers crashes *not* covered by other clear types (e.g., dart-out), in which it has been determined that the pedestrian ran or walked into the car.

**Urban Pedestrian Accidents Countermeasures Experimental Evaluation,* Vol. 1, Behavioral Evaluation Studies, Wallace G. Berge, prepared for National Highway Traffic Safety Administration and Federal Highway Administration, U.S. Department of Transportation, Washington, D.C., February 1975, page 1-1.

Multiple Threat. The pedestrian is struck by car *x* after other cars blocking the vision of car *x* stopped in other lanes going the same direction, and avoided hitting the pedestrian. For example, cars in lanes one and two stop and permit the pedestrian to cross; car *x* in lane three going the same direction hits the pedestrian as he steps out in front of the car in lane two. This classification is not used if the striking vehicle is going in the opposite direction from the stopping cars. (In that situation, the stopping cars would not block the driver's vision.)

Bus Stop Related. This type includes cases in which the location or design of the stop appears to be a major factor in the causation; e.g., the pedestrian crosses in front of the bus standing at a stop on the corner, and the bus blocks the view of cars. It does not include those cases that may be considered as exiting from a vehicle, nor does it include cases in which the stop is only an attraction or distraction.

Vendor--Ice Cream Truck. The pedestrian is struck going to or from a vendor in a vehicle on the street. This is usually similar to a dart-out, with ice cream trucks being the most frequent attraction. This specific classification was given precedence over dart-out when assigning cases to types.

The following table further defines these accident types. In terms of some of their locational (e.g., block location, environmental settings, etc.), and behavioral (e.g., running into roadway, between parked cars, etc.) characteristics.

Table 1

PEDESTRIAN ACCIDENT DESCRIPTION[1]

	Accident Type	% of Ped. Accidents	% That Are Fatal	Characteristics					
				Time of Day	Ped. Age	Block Location	Area	Accident-Related Behavior
1.	Dart-out First Half	24.1	8.3	Day (70.5)[2]	5-9 (52.5)	Nonintersection (90.7)	Residential (63.4)	Running into the roadway Failure to look for traffic Entry between parked vehicles
2.	Dart-out Second Half	8.8	10.4	Day (71.7)	5-9 (49.7)	Nonintersection (74.1)	Commercial (35.4)	Running into second half of roadway Midblock crossing Entering between parked vehicles
3.	Intersection Dash	8.4	6.7	Day (76.8)	5-9 (39.0)	Intersection (96.9)	Commercial (48.5)	Failure to look for traffic Crossing against the light Running into the roadway
4.	Vehicle Turn/Merge with Attention Conflict	6.4	8.8	Day (70.9)	All	Intersection (85.5)	Commercial (73.7)	Vehicle turning in proximity of pedestrians Failure to look for traffic Failure to detect pedestrian
5.	Pedestrian Strikes Vehicle	4.0	2.3	Day (8[illegible].6)	5-9 (34.2)	Intersection (57.6)	Commercial (40.7)	Running into the roadway Failure to look for traffic Entry between parked vehicles
6.	Multiple Threat Situation	3.2	5.8	Day (83.6)	10-14 (20.9)	Intersection (70.7)	Commercial (65.2)	Entry from in front of standing vehicle Small separation between stopped vehicle & pedestrian Running in roadway Failure to detect pedestrian
7.	Bus Stop Related	2.6	17.9	Day (80.4)	10-14 (17.0)	Intersection (81.1)	Commercial (61.8)	Entry from in front of stopped bus Failure to detect pedestrian
8.	Vendor-Ice Cream Truck	1.5	12.4	Day (87.0)	5-9 (69.0)	Nonintersection (31.8)	Residential (78.3)	Running into the roadway Failure to look for traffic Excessive vehicle speed Failure of driver to detect potential threat

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[1] Data based on Snyder and Knoblauch (1970).

[2] Percent so classified.

Table 2

SUMMARY OF COUNTERMEASURES FOR PEDESTRIAN SAFETY

Countermeasure	*Utility*	*Expected/Actual Results*
Segregation of traffic by type; isolation of pedestrian from traffic	Roadway differentiation by type of traffic; separation of pedestrian movement and vehicles; separation of pedestrians by footpaths, underpasses, escalator-type overpasses	Substantial savings in accidents, injuries, property damage and lives; reduction in cost of time loss imposed on vehicular traffic by pedestrians
Provision for reduced speed limits in school areas and adult crossing guards	Installation of warning signs, flashing lights, reduction of speed limit in school area	Increased protection of school-age pedestrians in school zones
Use of reflective and retroreflective materials for greater pedestrian visibility	Brighter reflective characteristic than white material; ease in application to clothing, and removal when not required	Increased visibility of pedestrians after dark, with commensurate reduction of casualties
Public education on pedestrian rights and responsibilities	Develop responsible reactions to traffic danger	Formulation of pedestrian safety programs for children and adults
Identification of drinking pedestrians and the removal of unqualified or medically impaired drivers	Control of accidents involving problem drinkers and removal of certain drivers from the road	Minimize accidents resulting from alcohol and human failure
Creation of safe play areas in high-accident, high-density areas	Provision of adequate, safe play areas away from traffic	Reduction of accidents to children
Crosswalk illumination and use of abrasive at crossing site	Illumination providing no glare in the motorist's field of vision and faster stopping capability than smooth surfaces	Reduction in vehicle-pedestrian accident rate
Redesign of streets, creation of pedestrian preserves and paths, prohibition of vehicular traffic from certain streets during specific daylight hours.	Accommodates movement of growing populations while prescribing transport and safety features	Improvement in public transport; increased safety for pedestrians
Prohibition of on-street parking; parking restrictions; barriers; and improvement of traffic signal cycles	Field of view of driver and pedestrian greatly improved; removal of physical obstructions; prevention of pedestrian passage between parked vehicles; and enabling pedestrians to cross intersections with greater safety	Increased safety for pedestrians

From *A New Look at Pedestrian Safety*. U.S. Department of Transportation, National Highway Traffic Safety Administration, November, 1975.

ACTIVITY #25

Mini-unit Topic: Learning About Pedestrian Safety

Approximate Class Time: 1 period

Capsule Activity Description: Students explore ways to cope with pressures to walk and play unsafely by responding to hypothetical letters from various age students in situations of conflict about walking and playing.

Goal:

To become aware of peer pressure to behave unsafely and be able to resist that pressure.

Concepts Treated:

- Safety is a concept that is ignored by many people, both adults and children.
- Peer pressure is very powerful.
- People often don't realize that there are pedestrian safety problems until an accident has happened.

ACTIVITY

Students explore ways of coping with pressures to walk and play unsafely by responding to hypothetical letters from students of various ages who are faced with such pressures.

Students divide into small groups and each group is given a different letter (samples appear at end of activity). Groups are instructed to act as a consultant bureau. Each bureau must answer the letter with a letter of advice. If they disagree among themselves they may include more than one approach in their letter but they should write only one letter to the advice seeker.

When the groups have responded to their inquiries, the various bureaus exchange letters. Each group reads the original inquiry and response, and evaluates it in light of the following points:

- The appropriateness of the response to the situation.
- How effective the response would be if used in the situation.

- Would they, if confronted with a similar problem, be able to use the advice given? Why or why not?

If the groups feel they can improve on the advice in any way, they are to do so.

Each bureau then explains to the class why it advised the particular course of action in the original response. The group that evaluated that response states its position and any changes. The rest of the class is allowed to comment and ask questions throughout the explanation and evaluation.

Evaluation:

Each student writes a hypothetical letter about a peer problem he or she is encountering that has to do with pedestrian safety. Students exchange letters and each student responds to one other student's letter.

Variations and Supplementary Activities:

Students respond individually to the hypothetical letters and then compare responses.

Students role play calling problems to a hotline.

Dear Abby:

My friends and I often play hide and seek near the railroad tracks. There are a lot of places to hide--the bushes are thick, there are holes to climb into, and nobody can see you. Last week when we were playing, I was hiding in a hole alongside the tracks. I heard a train coming but the game wasn't over and nobody had found me, so I didn't want to leave my hiding spot. The train went by my hole and, boy, was I scared! It was a good thing it was a deep hole, or I could have been badly hurt. I don't want to play by the tracks anymore, because now I know how dangerous it is, but my friends are going to think I'm "chicken" and probably won't want to play with me ever again. What can I do?

Sincerely,
Scared to Death

Dear Abby:

My dad and I go out jogging almost every evening. We usually jog about a mile or two and often don't get home until after dark. Several times recently cars have blown their horns at us and once someone stopped and yelled at my dad and me to "get off the road." Dad is a really great person, but sometimes he's a little dumb. He likes to weave into the street and back to the side while he's jogging. He says it's good for his leg muscles. It might be good for his leg muscles, but it's going to be terrible for his legs when he gets hit. He also runs on the right-hand side of the road. He does this because watching the traffic coming at him is annoying and he can't concentrate on his running. I've tried to tell him that what he's doing is unsafe, but he doesn't seem to hear me. What can I do?

Sincerely,
Running Scared

Dear Abby:

I am 9 years old and my brother is 11. He is the safety patrol on our street. All the kids like my brother and I do too. My problem is that I don't think my brother is a very good safety patrol. The other day, he told my friends and me to cross the street. Just as we stepped off the curb, a car came whizzing by and almost hit us. This isn't the first time this has happened either. If I tell my parents they will get mad at him and I don't want to get him in trouble. If I tell my teacher he will probably be taken off the safety patrol. He would just die if he couldn't be a safety patrol. It's hard for me to talk to my brother because he thinks I'm just a little kid. How can I help my brother do a better job so we all don't get killed?

Sincerely,
Worried

ACTIVITY #26*

Mini-unit Topic: Learning About Pedestrian Safety Approximate Class Time: 1 period

Capsule Activity Description: Students discuss what restrictions they would set for their children on walking and playing safely.*

Goal:
To understand what are reasonable rules of safety for children of different ages.

Concepts Treated:

- Safety often seems more important to the observer than to the person engaged in unsafe conduct.
- Safety regulations may be different for different groups.
- Threat of punishment is not always an effective deterrent.

ACTIVITY

Prior to this class, students are given a sheet instructing them to set rules for a son and daughter regarding pedestrian safety. A sample sheet is on Spirit Master #6.

Students break into small groups and are given instructions to

1. Read each other's papers.
2. Discuss and record on a blank group sheet the best rule and punishment for each safety problem.
3. If different rules and/or punishments were set for the son and daughter, justify these.

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*This activity also appears in Mini-unit 1.

Groups report their results to the class and respond to comments and questions from class and teacher. If it is not brought up, you may want to discuss why some punishments are more harsh or lenient for particular safety problems.

Evaluation:

Students write the dialogue to scenarios in which a son or daughter argues over safety rules with his/her parents.

Variations and Supplementary Activities:

Activity is a good evaluation of learning about interpersonal situations involving safety.

Students can fill out the sheets in class or as homework prior to the discussion.

Class can role play parents and "defend" their rules.

ACTIVITY #27*

Mini-unit Topic: Learning About Pedestrian Safety

Approximate Class Time: 1-2 periods for either option

Capsule Activity Description: Students evaluate a pedestrian accident and determine the causes and responsibility.*

Goal:

To understand what is the most important cause of a pedestrian accident that had several causal factors.

Concepts Treated:

- Drinking often leads to automobile accidents.
- Weather is often a contributing factor in accidents.
- "Dart-out" into the street is a common cause of pedestrian accidents.
- Accidents often have multiple causes.

ACTIVITY

Option 1

Read the attached scenario to the class. Instruct the students they will be assigned parts in the resulting manslaughter case. The parts should be assigned on a volunteer basis to ensure the best possible role play. Parts may be found after the scenario.

There are a minimum of 10 parts that can be assigned.

Judge
Defense attorney
Defendant
Babysitter

Police officer
Defendant's co-worker
Three jurors (more may be assigned)
Prosecuting attorney

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*Adapted from Peter Finn. *Innocent Until*. (Abt Publications, Cambridge, MA: 1973).

Participating students read their role profiles. No one else should be aware of what these profiles contain so as not to spoil the authenticity of the trial. Students may elaborate on their role, but may not change the basic facts outlined in the profile.

There may be points at which you will want to intercede during the trial and you should feel free to do so. However, matters of courtroom procedure should be decided by the judge even at the risk of some inaccuracy about actual rules of procedure.

Hold the trial at the front of the room with desks and chairs arranged in courtroom fashion. When it is time for the jury to deliberate, place desks in the middle of the room and have the rest of the class sit around the edge to listen in. The class is not to comment while the jury is deliberating as it would interfere with trial proceedings.

When the jury as reached a verdict (majority agreeing) it is announced and the judge sets the sentence if it is warranted.

Follow the trial with a discussion of the responsibility of an individual, be it an automobile driver or pedestrian, both morally and legally.

Option 2

Students read the scenario on the page after next in which they are to act as the judge in a pedestrian accident case. The driver of the automobile involved has been charged with manslaughter: the accidental killing of someone because of his negligence or carelessness.

As the judge of the case, each student decides

1. Who was to blame for the accident
2. Whether the driver of the car should be punished and why
3. If there is a punishment, what it will be

Students then form small groups to discuss and agree on the above three questions. Groups report results to the class and respond to questions and comments from students.

Evaluation:

Students write their own scenarios and role profiles for various accident situations.

Variations and Supplementary Activities:

Students research legal procedure and alcohol and traffic safety.

Tape-record the trial. Play back parts or all of it to discuss points of interest.

Invite an attorney or police officer to class to discuss rights of the citizen, traffic laws, and specific accident cases.

Scenario

Overview of the Accident

Brad Harris was on his way home from the office Christmas party. It wasn't a very good party this year so he had left early. All there was to eat and drink were some crackers and cheese and wine--he had hoped the party would be like last year's with a big band, champagne, and lots of foot. To make up for it, he had had four or five glasses of wine. Brad always told himself that he couldn't get dunk on wine--just sleepy. As he was leaving the party, it started to snow--not very much, just enough to make the ground white. Instead of going straight home, he decided to stop off at the little grocery store around the corner from his apartment to pick up something for dinner. As he turned his car down the street by the store, something ran out in front of the car. It startled him, he slammed on the brakes, skidded, and felt a terrible thud. He jumped out of the car to see what he had hit. A woman was lying in the street.

Brenda Jones was frantic. The children weren't in bed yet, she couldn't find the shoes that matched her new dress, she knew she would be late meeting her husband at the restaurant, and the babysitter still hadn't arrived. Why did her husband have to work late tonight of all nights? It would have been so much easier if he had picked her up at the house rather than her having to drive downtown to meet him. Just then the doorbell rang. "Thank goodness the sitter is here," she thought. She ran to the door. As she opened it, the dog raced out in front of her. She took off after him, running by the babysitter who stared after her in bewilderment. All Brenda needed right now was for the silly dog to run away. The dog headed straight for the street. Suddenly there was a squeal of brakes and then a terrible silence. The babysitter raced to the side of the road. She couldn't believe what she saw.

Role Profiles

Judge:

You must keep order in the courtroom and be completely impartial. You will also decide the sentence if the defendant is found guilty of the charge by the jury.

Defendant:

You know you were sober the night of the accident. You had had no more than three or four drinks, and then it was only wine. If it hadn't been snowing your car wouldn't have skidded and you wouldn't have hit that poor woman. You're almost positive you were only going 35 miles per hour. What a mess you're in.

Babysitter:

You wish you had been able to see what had happened the night of the accident, but the people down the block were having a party so there were a number of cars parked on the street blocking your view. But you're sure Mrs. Jones would never run into the street without looking first. That terrible man should never have been driving after having had so much to drink.

Prosecuting attorney:

You know very little about this case other than the man on trial has been accused of accidentally killing someone. You must prove that he was at fault. The man probably had too much to drink and was obviously driving too fast considering the poor weather conditions. The babysitter may be the only witness you have.

Defense attorney:

You know very little about this case other than the man you are defending is on trial for manslaughter--the accidental killing of someone because of his negligence or carelessness. The man said that he did not have very much to drink and he's sure he was perfectly sober. He is also sure he wasn't speeding. You will have to talk to the defendant in more detail to try to build up his case so that you can convince the jury that he is innocent of the charges.

Police officer:

When you got to the scene of the accident, everyone was pretty well shaken. You immediately radioed ahead to have a breath test ready for the driver of the automobile when you brought him in to the station. You could tell he had been drinking--his eyes were bloodshot and he wasn't talking very clearly. When you administered the blood test to check the level of alcohol in his blood, something went wrong with the machine and it didn't register. You knew that by the time you found one that was working, the alcohol in the man's system would have disappeared. No matter, you know a drunk when you see one, and this was one. The accident was, you feel, clearly his fault.

Defendant's co-worker:

Brad left the party long before you did. You had seen him just before he left because he had asked you if you wanted to go out for Chinese food. You wanted to stay at the party so you declined. Brad was fine when he left the party. You had been with him a good portion of the evening and you didn't see him drink very much at all. You know Brad pretty well--he would never be so irresponsible to drive if he were drunk.

Juror 1:

This is your first time as a juror. You family couldn't believe it when your name was drawn for this task. Your husband didn't want you to go because he would have to take care of the kids while you were in court. Boy, does he hate doing stuff around the house. You know this is your duty and you will do a good job--listen to all the facts carefully and decide accordingly. You just hope your kids will be okay while you are away.

Juror 2:

You've always wanted to be a member of a jury--and now is your chance. You know exactly how to act because you watch all the lawyer shows on television. In fact, you've seen all the old Perry Mason shows three times.

Juror 3:

You're a little scared about being a juror--you hate to see anybody get hurt for any reason. If you were ever to make a mistake about something important as a manslaughter case you could never forgive yourself. This whole thing send chills up and down your spine.

MINI-UNIT 7

LEARNING HOW TO BE SAFE WHILE BOATING

Water-based recreation has become more and more widespread. In today's affluent society, many families own boats and use them frequently during the summer. It becomes very important, therefore, for all members of the family to be aware of what the basic rules of boating safety are. To know how to swim is important, but it is not enough: from most boating accidents, you cannot save yourself by swimming; in fact, trying to swim for safety is often the very worst thing to do after an accident has happened.

Boating safety is all the more important because there are as yet no licensing regulations that require a minimum age and a minimum skill before a person can drive or sail a boat. Each person's safety in a boat is still a matter of his or her own knowledge, skill, and prudence.

Major concepts treated in this unit are

- Boats are unstable; therefore there are special procedures for boarding, disembarking, loading, unloading, and emergency situations.
- The Coast Guard has requirements for minimum safety equipment.
- Alcohol doesn't mix any better with boating than it does with automobile driving.
- Boating mishaps can be more serious than mishaps on land, because water is a more hostile element.
- Certain procedures in boating, such as fueling, are hazardous and require extra cautions.

You can suggest to some of your students that they do Activity #46 in Mini-unit 11. This gives them an opportunity to study official Coast Guard tables on boating accidents and their causes.

MINI-UNIT 7 LESSON PLAN

Learning how to be safe while boating

Activity #	*Activities*	*Class Time*
28[a]	DESCRIPTION: Through discussion and research, students learn how to avoid common boating accidents. GOAL: To know proper techniques for boarding, disembarking, loading and unloading a boat and for dealing with emergency situations.	1 period
29	DESCRIPTION: Students collect, look at, and handle various items that a boat is required to have or that it should have as optional items. GOAL: To know what are the basic safety items for a boat.	1 period
30	DESCRIPTION: Students role play a family involved in a boating incident. GOAL: To become aware of some possible causes of boating accidents involving children.	1 period
31 Spirit Masters #7 & #8	DESCRIPTION: Students read the beginning of a story about peer pressure and boating safety. Students supply the ending themselves. GOAL: To become aware of peer pressure and its likely effect on safety.	1 period

[a] This activity also appears in Mini-unit 1.

MINI-UNIT LESSON PLAN (CONTD.)

Learning how to be safe while boating

Activity #	*Activities*	*Class Time*
32	DESCRIPTION: Students and teacher discuss why fueling a boat is hazardous and what steps need to be taken to make it a safe procedure. GOAL: To know how to fuel a boat safely.	1 period

Total Class
Time: 5
periods.

ACTIVITY #28*

Mini-unit Topic: Learning How to Be Safe While Boating

Approximate Class Time: 1 period

Capsule Activity Description: Through discussion and research, students learn how to avoid common boating accidents.*

Goal:
To know proper techniques for boarding, disembarking, loading and unloading a boat and for dealing with emergency situations.

Concepts Treated:

- Boats are unstable.
- A boat must be kept balanced during all activities.
- If the boat capsizes, stay with it.
- If a person falls overboard, throw something--almost anything--near the person.
- Always wear personal flotation devices while boating.
- Weather is an important factor in boating safety.

ACTIVITY

As a class, discuss the proper boating techniques for the following situations:

- Boarding
- Loading
- Unloading
- Disembarking
- Capsizing
- Person overboard

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*This activity appears also in Mini-unit 1.

You may assign some of the students to research the proper methods, using the attached material or other books, or you may make input to the discussion using the material which follows.

Boarding

1. The number of seats in a boat does not show capacity. Seats are arranged so boat can be loaded evenly.
2. Board boat one at a time.
3. Don't jump off dock--boat may tip over.
4. Step down slowly and gently into middle of boat.
5. Keep weight low and move slowly from dock to boat.

Equipment Loading

1. Don't drop equipment into boat. A person standing on dock passes equipment to person in boat.
2. If there is no helper, move equipment to edge of dock, board boat, then lift equipment off dock piece by piece.
3. Distribute equipment *evenly* in boat.

Disembarking

Leave a boat in the same manner you board it--keep weight low, move slowly.

Unloading

Unload a boat in the same manner you load it--piece by piece and preferably with the help of a person standing on the dock.

Capsizing

1. A boat can capsize if it is overloaded or equipment or people are improperly loaded.
2. Capsizing occurs when a boat turns over and spills crew and equipment into water.

3. Stay with boat as long as it is floating--do *not* try to swim to shore. It's farther than you think.
4. If you are not already wearing a personal floation Device (PFD)--such as a lifejacket--put one on.
5. Try to turn the boat rightside up and empty it of water while you float alongside.
6. If you can get the boat half empty then climb in--very carefully--and finish bailing.
7. Don't try too hard. Working in the water will make you very tired. If you can't get the boat upright and empty save your energy and signal for help.

Person Overboard

1. If the boat is improperly loaded, someone may fall off.
2. If someone is sitting dangling legs in water or in an unsafe position (crosslegged, on bow, on gunwales) or standing, even a small wave may cause him or her to lose balance and fall overboard.

If Someone Falls Overboard

1. Call out "Person Overboard!"
2. Throw a buoy or cushion or ring buoy *near*, not *at*, person in water.
3. If you don't have such items on board, extend oar or paddle to the person.
4. *Never* take your eye off the person in the water.
5. *Never* dive in the water after the person.

Things to Remember or Do Before Going Out in a Boat

1. Never go out without proper equipment, especially PFDs.
2. Learn to swim before you take up boating.
3. Learn how to operate your boat or go out with someone who is already experienced.
4. Check the weather.

5. *Never go out alone.* If you must, leave a "float plan"--where you expect to go and when you expect to return.

To demonstrate the proper way to board a boat--rowboat, sailboat, canoe, small motorboat--place a large but not too tall table at the front of the room to use as the dock. Small benches, stools, or chairs which are lower than the table are placed alongside. Using these props, simulate boarding and loading a boat as well as disembarking and unloading.

Evaluation

Students answer questions about boating safety. (For example, Questions 26 and 27 of Activity

Variations and Supplementary Activities:

In a swimming pool or swimming area of a lake have an "overboard" student call for help from another in a raft, innertube, rowboat, or canoe 15 to 20 feet away. Compare the different times required for the rescue considering the following methods:

1. Rescuer throws a 25-foot rope to the person overboard.
2. Rescuer throws a 25-foot rope with a float on the end to the person overboard.
3. Rescuer paddles to the person overboard.
4. Rescuer swims to the person overboard.

Discuss the importance of carrying rescue equipment such as ropes and floats along while boating.*

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*This supplementary activity was designed by Donald Blocker.

ACTIVITY #29

Mini-unit Topic: Learning How to be Safe While Boating **Approximate Class Time:** 1 period

Capsule Activity Description: Students collect, look at, and handle various items that a boat is required to have or that it should have as optional items.

Goal:

To know what are the basic safety items for a boat.

Concepts Treated:

- Certain safety items are required on boats by the Coast Guard.
- There are different kinds of personal flotation devices, for different purposes.
- When boating at night, lights are required.
- Anything that floats can be a safety item in an emergency.

ACTIVITY

Have students bring in safety items from their families' boats. If you cannot get enough equipment from the students, ask a representative from the Coast Guard, the Coast Guard Auxiliary, or the state boating office to bring in these items, lecture on them, and demonstrate their use. You may have to send a note home, especially with younger students, to explain why you want the equipment, something like this:

> We are studying boating safety. We would like to display some of the safety items that boats carry. Would you please allow (name of student) to bring in a (name item) from your boat?

Decide in class discussion which student is going to try to bring in each item, so you don't get too much of the same thing. Things that can be brought in are:

Personal flotation devices (PFDs)--various sizes (child, adult) and various kinds (life jackets, life vests)

Paddles

Running lights--red and green

Flashlights for signalling

Whistles or horns

Other items that related wholly or partially to safety may be brought into class: e.g., buoyant seat cushions, fenders, anchors, anchor lines (there are different kinds of anchors), marine radios. Where possible and appropriate have the students use the safety items, i.e., put on the personal flotation devices, operate the radios to discover where the band with the weather forecasts is.

Where items are too large, or costly, to bring in, the students can make drawings of them and describe their functions.

Evaluation:

Students give a 30-second description of the use of a safety device (one which they have not brought in).

ACTIVITY #30

Mini-unit Topic: Learning How to Be Safe While Boating

Approximate Class Time: 1 period

Capsule Activity Description: Students role play a family involved in a boating incident.

Goal:
To become aware of some possible causes of boating accidents involving children.

Concepts Treated:

- Safety regulations for boating are for the benefit of those who don't have much experience on the water and in boats.
- Boating mishaps can be more serious than mishaps on land, because water is a hostile element.
- Always wear a personal flotation device while boating.

ACTIVITY

For this activity, students should already be aware of safe boating practices (see Activity #28). Set up the front of the room as you did in Activity #28, add two chairs off to the left and behind the "dock."

Assign or ask for volunteers for parts in a boating role play: two children, mother, father. Send these students out of the room. Read all three role profiles (attached) to the class so they may have an overview of the role play prior to its being acted out. While you are reading the profiles, ask the class to think about how they would handle the situation if they were the children, and then again as the parents.

Bring the two students who are acting as the children back into the room. Tell them they are to act out the role profile as if they were the children being described. Read them the profile. The students act out their roles.

Next bring the mother and father back into the classroom while the children are still in the "boat." Tell them to sit on the two chairs (the "automobile"). They then act out their role profiles, simultaneously, after reading them silently to themselves (neither sees the other's profile).

At the completion of the role play, the class comments on its realism and then the whole group discusses some or all of the following points.

- Were the children doing anything wrong? Why or why not?
- What did you think of the children's behavior while in the boat? Was it safe or unsafe?
- Why was the father worried?
- Did the parents act appropriately when they saw their children in the boat? If yes, why? If not, how should they have acted?
- How else could the children have retrieved their lost oar or have gotten to shore without it?
- How would you have acted if you were a parent?
- Do you think those children will ever go out in a boat alone again without first getting permission?
- Would you ever do what those children did? Why or why not?

Evaluation:

Students make up their own scenarios and role profiles and act them out.

Role Profiles

Two Children

It's a hot day in July. The two of you have nothing to do this afternoon because your parents have gone to your cousin's wedding--kids weren't invited. What a drag. Your father put the row boat in the water this morning and had promised to take you out for your first ride of the season but there wasn't enough time before he had to leave for the wedding. You don't see any reason why you can't go out without him. You both rowed the little boat at least once or twice last summer and it wasn't hard at all. The neighbor next door is supposed to be keeping at "eye" on you but she is doing a wash right now and won't even notice if you sneak off to the lake. You take the oars out of the shed by the side of the house and head for the dock where the boat is tied. Your father always made a big deal about the "proper" way to act around boats. You decide that since you are doing something you could lose your allowance for if you got caught, that you had best try to do things right while you're in the boat so nothing happens. Besides, if you're really careful, maybe you *won't* get caught or punished. After you get in the boat all you have to do is put the oars in the oar locks, push off from the dock, and row. Nothing to it.

Mother

You wish you could have found a better babysitter for the kids. Mrs. Bain always says she loves to sit for the children, but she really isn't very good about watching them. Unfortunately you had no choice today but to ask her. You couldn't very well miss your own niece's wedding. You still can't help but worry about them--you'll be glad when you get home. It's not far now. In fact, when you go around the next corner you'll be able to see the lake. No matter how many times you drive around that bend and catch that first glimpse of the lake, it still takes your breath away. To you, this is the most beautiful place in the world. And there it is again--the mountain looking down on the water, the pine trees hugging the shore, and oh my gosh, aren't those your kids out on the lake in the row boat!!

Father

You can't believe that you didn't warn the kids about not using that row boat while you were at the wedding. How stupid could you have been! But they're good kids and they wouldn't do anything so dumb as to go out in the boat by themselves. They were, however, terribly disappointed this morning when there wasn't time to go for a quick ride. Maybe the oars are still in the basement in the back closet where they have been stored all winter. No--you remember now taking them out and putting them in the shed when you came up two weeks ago to get the cottage ready for the summer. Of course Mrs. Bain is watching them so nothing could possibly happen to them. What a relief! It's a good thing you never mentioned to your wife that you put the boat in the water this morning. She would be a nervous wreck thinking the kids might have "rowed" off into the sunset or something. *Your* kids would never do a thing like that. Well you're almost home now. Still you must admit you will be happier when you see the kids sitting in front of the television set. There's the lake; just another few feet to the driveway. Oh no! What are the kids doing on the lake! And with only one oar!

ACTIVITY #31

Mini-unit Topic: Learning How to Be Safe While Boating

Approximate Class Time: 1 period

Capsule Activity Description: Students read the beginning of a story about peer pressure and boating safety. Students supply the ending themselves.

Goal:

To become aware of peer pressure and its likely effect on safety.

Concepts Treated:

- Peer pressure is a strong influence on actions.
- Safety often seems a concept for sissies.
- Alcohol doesn't mix with driving either a car or a boat.
- Everyone in a boat should wear a PFD.
- Never jump overboard after a person who has fallen overboard.

ACTIVITY

Students read the story below, which also appears on Spirit Masters #7 and #8. They then supply their own ending.

> It was late on a summer afternoon, one of those sweltering days when heat rises from the pavements and nothing seems as pleasant as the prospect of getting away from the city and out into the country. Joe was riding along in his father's car and in spite of the heat he felt great. He had finished working at his summer job as a gas station attendant about half an hour earlier and he had gotten paid. He had talked his mother into letting him use the family car to drive out to the lake and go for a swim with his friends. "Be careful," his mother had said. "Are you going to ask Carol to come along, too?" "Yes, I think I will." "Well, good, maybe you'll be careful for her sake if not yours," his mother had said and waved him on. She

liked Carol and knew that she was not the kind of girl who would spur Joe on to foolishness. "We won't expect you for dinner, but don't be home too late." "OK, we won't," he had agreed, but he didn't know whether his mother had heard him since he was already halfway down the driveway.

When he arrived at Carol's house and proposed a drive and picnic and a swim at the lake, she quickly agreed. Her mother, too, urged them to be careful, but she liked to see the young folks have some fun, especially in this heat.

When they were in the car, Joe suggested that maybe they should take another couple along for company. And without much difficulty, they rounded up Bill and Joan, who quickly agreed.

Quite a bit of time elapsed before the four young people got to the lake, though. They had to buy some frankfurters, and charcoal and some soft drinks and then it was a forty minute drive to the lake. They started the charcoal in one of the outdoor stoves and all went for a swim. When they got out of the water, they were hungry and put their frankfuters on the grill. Joe opened the cans of soda, but when he offered one to Bill, he declined. "No, thanks, I've got something better." He reached into his picnic refrigerator and produced a can of beer. "Anybody care to join me?" Joan took one, but Bill hooted derisively when Joe and Carol turned down the offer. "What's the matter with you two? Don't you like any fun? Come on, we've got a long time yet before we have to go home, nobody will ever know the difference." "No, thanks, Bill," Joe said, "but I've got to do the driving going home and I don't want any beer right now."

Bill: "A little beer isn't going to hurt your driving. In fact, it'll probably relax you and help you."

Joe: "No, thanks, you go ahead, but I'll pass."

Bill: "Well, OK, but I'm going to do a little driving even though I've had a can of beer."

Joe: "Oh, no, you're not going to drive my car, especially not after drinking. Sorry, but that's definite."

Bill: "Dummy, I'm not talking about a car. I'm talking about a boat. My uncle's motor boat is tied up here and he said I could use it any time. I've driven it before and he trusts me with it, so much that he's given me a set of keys for it. Come on, you want to go right now?"

Joe: "Oh, I don't know, it doesn't seem too good an idea. What do you think, Carol?"

Carol: "I don't know, I don't think so. What do you think, Joan?"

Joan: "I don't know, I guess maybe it's OK."

Bill: "Come on, everybody keeps saying 'I don't know.' This will be fun. It's got a big engine on it, over 100 horsepower I think. That makes it safe, you know. We can get out of any trouble real fast. But I don't think we'll get into any. We'll just spin around a few times. What do you say?"

Joe: "Bill, you know Carol doesn't swim so good. Do you have any life jackets in that boat?"

Bill: "Who needs life jackets? This lake is just a puddle, you can practically walk from one end to the other. If Carol falls over, I'll jump in after her and get her before she knows she's even been in the water."

Joan: "Yea, who is driving the boat while you're doing that?"

Bill: "Come on, come on. All you people think of is reasons not to go. Why don't you think of reasons to go? We have a boat, it's hot, we can get a little high with beer and we can cool off riding around. Now what could be better?"

Carol: "Yah, but..."

Bill: "No more yahbuts, let's go, gang..."

After the students have finished writing the ending, have two or three volunteers read their version of an ending. Try to get different kinds of endings read, if possible.

As a class, discuss what different students perceive as the likely ending, and why. Do the three young people give in to Bill? Is this a case of peer pressure? Do the other three people exert pressure on themselves to conform? Particularly discuss whether drinking while handling a boat is dangerous.

Evaluation:

The story ending which the students write serves as evaluation for this activity.

ACTIVITY #32

Mini-unit Topic: Learning How to Be Safe While Boating **Approximate Class Time:** 1 period

Capsule Activity Description: Students and teacher discuss why fueling a motor boat is hazardous and what steps need to be taken to make it a safe procedure.

Goal:

To know how to fuel a boat safely.

Concepts Treated:

- Gasoline is highly explosive.
- Gasoline is heavier than air.
- A spark of static electricity can start a gasoline explosion.
- Fueling a boat is more dangerous than fueling a car.
- Gasoline is most explosive when it is in vapor form.

ACTIVITY

Students and teacher discuss the proper way of fueling a boat, what the dangers are, and what steps need to be taken to make it safe. You should take the lead role here to make sure that all important points are covered. The following points need to be covered:

Always try to fuel the boat in good light. It's too easy to spill gasoline when it's dark.

Don't smoke and don't allow anyone in or near the boat to smoke while you're filling the tank with gasoline.

Make sure all electrical equipment on the boat is shut off and don't operate any switches while you're fueling.

Keep gasoline fumes out of the boat by closing all doors and hatches. Gasoline fumes (vapor) are much more treacherous than dynamite.

If you use portable tanks, fill them away from the boat. When full, put the caps on tightly and wipe the tanks off.

Keep the metal nozzle of the gas hose in contact with the tank *at all times* to prevent a static spark.

Don't spill gasoline; pay attention to what you're doing. Check for leaking fuel line fittings. If some gasoline does spill, don't let it turn to vapor, wipe it up immediately. Get rid of the rag you wiped it up with.

When you're through, put the gasoline tank cap back on tightly. Then check it.

Open up the boat to air it out. Walk around the inside of the boat and give it the sniff test, especially in low places: gasoline vapor is heavier than air and sneakier than nitroglycerine. Ventilate with power blower, if available. Wait a few minutes before you start the engine.

In general, the discussion should let the students see that gaoline is a very dangerous substance. It is highly explosive, that is of course why it is used as a fuel in internal combustion engines, but it is also why it needs to be handled with care. Many people tend to forget how dangerous gasoline can be, because of the fact that it is constantly and casually handled at gasoline stations and apparently without any untoward results. However, there are important differences between cars and boats in the matter of fueling. If gasoline is spilled in a gas station, it stays behind, on the ground, and soon evaporates. If gasoline is spilled in a boat, it stays in the boat and, being heavier than air, it collects in the low places of the boat, i.e., around the bilge. Furthermore, there are more safety precautions built into a car than into a boat: for example, there is a firewall between the engine and the passenger compartment; being on solid ground, a car doesn't sway while it is being fueled, so the danger of spills is lessened.

Evaluation:

Students write a set of rules for safe fueling. They list the do's and don'ts of fueling, putting the most important ones first.

Supplementary Activities:

Research Activity #45 serves to supplement this, particularly the statistics about boat accidents that are fire-related, given on Spirit Master #11.

MINI-UNIT 8

LEARNING ABOUT EMERGENCY VEHICLES

Students of all ages need to be aware of what emergency services are available to them if they should need them. At the same time, they need to have a proper appreciation that emergency services are just that--something to be used when needed but not abused and called for when unnecessary. Furthermore, they need to learn what many adults do not seem to know, that when an emergency vehicle travels to where it has been called, someone's life or health usually is in danger and the emergency vehicle's trip and actions are not a matter for general public entertainment.

Major concepts treated include

- There are different kinds of emergency vehicles that are available.
- The public should appreciate that a certain length of time is required for an emergency vehicle to reach its destination.
- There are actions citizens can take to improve services provided by emergency vehicles.

If you wish, you can enrich this unit by further involving your students in Activity #47, which focuses on emergency services within one's own community.

MINI-UNIT 8 LESSON PLAN

Learning about emergency vehicles

Activity #	*Activities*	*Class Time*
33[a]	DESCRIPTION: Class discusses the nature of emergency vehicles. GOAL: Knowledge of different kinds of emergency vehicles and the special duties which each performs.	½-1 period
34	DESCRIPTION: Students determine the time needed for an emergency vehicle to reach a given point in their community. GOAL: To know how long it takes before an emergency vehicle can arrive at the scene.	2 periods
35	DESCRIPTION: Students discuss actions which citizens can and should take to facilitate the provision of emergency care by operators of emergency vehicles. GOAL: To know what helps and what hinders emergency vehicles to reach an accident scene quickly and to provide services.	1-2 periods

Total Class Time: 3½-5 periods.

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[a] This activity also appears in Mini-unit 1.

ACTIVITY #33*

Mini-unit Topic: Learning About Emergency Vehicles

Approximate Class Time: ½-1 period

Capsule Activity Description: Class discusses the nature of emergency vehicles.*

Goal:

Knowledge of different kinds of emergency vehicles and the special duties which each performs.

Concepts Treated:

- What is an emergency?
- Different kinds of emergencies call for different kinds of services.
- Some emergency vehicles, like fire engines, provide more than one kind of emergency service.
- Speed is of the essence in most emergency situations.

ACTIVITY

Set the stage for other activities on emergency vehicles by asking students to identify what they think the phrase "emergency vehicle" means. Amplify their comments, as necessary, with the following information. "Emergency vehicle services" refers to assistance provided to citizens through the use of vehicles when speed and special equipment are required to prevent or alleviate injury, suffering, or economic loss. Vehicles regularly involved in providing emergency services include ambulances, police cars, fire engines, helicopters, airplanes, and Coast Guard rescue boats.

Discuss the importance to the public of having quality emergency vehicles available by enumerating the instances in which such services are essential or valuable. For example, recent medical studies have shown that the care given to the injured or sick in the minutes immediately following an emergency is crucial to the chances for recovery. A recent U.S. Department of Transportation study stated that "23 percent of auto fatalities died of probably survivable injuries due to problems throughout the emergency care system." There has been growing concern in many communities over the wide variations in speed of response and quality of care that is available. In a matter of such serious personal concern, it is important for a potential user of this type of emergency service to be aware of the emergency care system in his community, and when and how to use it.

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*This activity also appears in Mini-unit 1.

Through a program of education, the transportation consumer can learn to make responsible decisions about the appropriate service to contact in an emergency, how to contact it, methods of assuring adequate community emergency services, and seeking redress of grievances. These skills will not only facilitate the use of the service, but also stimulate its community-wide improvement.

Special mention can be made of the use by the public of the *fire department* for all kinds of emergencies, both appropriately and inappropriately. Many residents know that a call for an ambulance or police car may not produce help for as long as an hour. New York City fireman Dennis Smith writes in his novel *Report from Engine Co. 82* "...there is a backlog of ambulance calls in the South Bronx, and we will have to wait forty-five minutes before one will arrive." But turning in a fire alarm will always bring the fire fighters. "The only real sure thing in this town (New York City) is that the firemen come when you pull the handle on that red box." Young students need to be aware of both the reliability of this source of emergency help and the inconsideration and dangers of using it unnecessarily.

Evaluation:

Students answer questions about emergency vehicles, such as Questions 30 and 32 in Activity #50.

ACTIVITY #34

Mini-unit Topic: Learning About Emergency Vehicles

Approximate Class Time: 2 periods plus out-of-class time

Capsule Activity Description: Students determine the time needed for an emergency vehicle to reach a given point in their community.

Goal:

To know how long it takes before an emergency vehicle can arrive at the scene.

Concepts Treated:

- The route an emergency vehicle takes is worked out beforehand.
- Speed with which an emergency vehicle arrives at its destination is determined by length of trip, congestion on the streets, and speed of the vehicle.
- In addition to the trip time, start-up and set-up times have to be considered.

ACTIVITY

Students try to determine, for a given point, how long it would take emergency vehicles to reach there. It is probably best to do this for fire-fighting equipment, since fire houses are easily identified and since fire departments usually know how long it is supposed to take to get to any given point.

The first part of the exercise is to use a map of the city or town under consideration. Locate one of the firehouses on the map. Then pick a point that is within the service area of that firehouse. Preferably the point should be one the students are familiar with and the firehouse should be one in their neighborhood. Determine, from the map, the best way of getting to the fire from the firehouse. Keep in mind such things as one-way streets and which streets are wide and available for high-speed traffic and which ones are narrow and likely to be congested. After the best route has been determined, measure its length, using the scale of the map. (The best route usually will turn out to be the shortest or most direct route; if the students decide that a longer route is better, have them defend their choice.) From the length of the route determine the time that it would take to get from the firehouse to the fire. To do this, the students must estimate (1) the average speed of the fire vehicles and (2) the amount of time needed to get started, i.e., for the driver and the firemen to man the vehicle and get it out of the firehouse. They should also add (3) the time needed, after the engine reaches the fire, to set up to fight the fire--connect the hoses to fire hydrants, start the pumps, run up ladders, carry the hoses to the spot where they are needed and start pumping water. This of course also is an estimate and may be omitted, if desired, since it is a fairly difficult estimate.

The second part of the exercise is for the students, with the help of their parents, or older siblings, if necessary, to drive over the route from the firehouse to the "fire." This should be done observing all traffic laws. Students should time the trip as closely as possible and also determine the length of it from the car's odometer. From the length of the route and the time taken by the family car, an average speed can be calculated:

$$\text{Average speed} = \frac{\text{Distance travelled}}{\text{Time taken for trip}}$$

This trip will also serve to acquaint the students with some of the hazards of traffic that firemen would have to cope with if they were to make this trip under emergency conditions.

The third part of the exercise is a trip to the firehouse. If possible, have the students themselves arrange for a visit, either by telephone or letter. Have them explain the purpose of the trip. If your students are too young or inexperienced to arrange for the visit themselves, you will have to do so yourself.

At the firehouse, students will probably want to look around. However, the major purpose of this trip is to learn the time it takes to reach the point in question. Have the students ask one of the drivers (1) which route he would take and (2) how long it would take them to reach there. He should be able to answer both questions easily, since fire departments have prescribed routes for all points in their area and since they also have standards about the maximum time it is supposed to take to reach any given spot after the alarm has been received. Ask him (3) what the average speed of the fire engine would be on this trip. I.e., if the speed is said to be very high, then the trip should only take a short time. The speed may of course vary, depending on the time of day and traffic conditions. Finally, (4) ask the driver what is the longest trip an engine from this firehouse is expected to take: i.e., what is the maximum amount of time that should elapse (no matter where the alarm comes from) before a fire engine reaches any spot in the service area.

When students return to the classroom, have them compare their estimate of the time to reach the fire with what the fire department says it would take. Discuss any differences--did the students overestimate the speed with which the fire engine could travel, for example?

Have them note the difference in time between a trip taken by family car, observing all traffic rules and a trip taken under emergency conditions by an emergency vehicle. How significant is the difference?

Evaluation:

Give students map of a fictitious city, or just any city not their own. Have them indicate where firehouses should be located for maximum protection at least cost.

Variations and Supplementary Activities:

Apply this activity to the police department--how long will it take for them to respond to an alarm that is phoned in?

See if the Coast Guard has any figures on how long it would take one of their boats to reach a vessel that is in distress. Have the students discuss the implications of the long time even an emergency boat needs to reach a vessel that needs help.

ACTIVITY #35

Mini-unit Topic: Learning About Emergency Vehicles

Approximate Class Time: 1-2 periods

Capsule Activity Description: Students discuss actions which citizens can and should take to facilitate the provision of emergency care by operators of emergency vehicles.

Goal:

To know what helps and what hinders emergency vehicles to reach an accident scene quickly and to provide services.

Concepts Treated:

- Citizens have a responsibility to help emergency vehicles and emergency personnel.
- Curiosity of spectators often interferes with the ability of emergency personnel to do their job properly.
- Many services can be better provided by regular service providers than by emergency service providers.
- False fire alarms are costly in terms of dollars and lives.
- Vandalism of emergency vehicles is a prevalent and costly occurrence.
- Driving a police car, fire engine or other emergency vehicles with the light flashing and the siren going is no protection against crashes and accidents.

ACTIVITY

Students in small groups or as a class identify specific ways in which citizens can help and have a responsibility--legal, civic, or ethical--to help emergency vehicles perform their services effectively. Examples of relevant citizen action (and inaction) include

Citizens should refrain from placing frivolous calls to ambulance companies, police, fire fighters, Coast Guard. Students can break into small groups and each group can identify one or two calls which it thinks a citizen might consider but should not place to an emergency service. Groups can exchange "calls" and discuss whether the calls are indeed frivolous or not. Examples of unnecessary calls might be

- Calling for an illness or injury when the patient could be easily transported by conventional auto to a local medical facility for examination
- Calling for assistance to coax a cat down a tree
- Calling the fire department instead of a plumber because a water pipe broke
- Calling the fire department instead of the Public Works Department to remove a fallen tree

However, when help is urgently needed, citizens should telephone the most appropriate and responsive emergency service.

Citizens who are driving should observe practices which will facilitate the travel and work of emergency vehicles. This includes pulling over to the side of the road when an emergency vehicle is approaching (or, as a pedestrian, not attempting to cross streets in the presence of an emergency vehicle). Obstructing the passage of an emergency vehicle not only delays the speed with which it can provide care, it also can lead to a traffic accident involving the emergency vehicle itself. This also includes not double parking on narrow streets or otherwise obstructing traffic (e.g., to change a flat tire) so as to hamper the swift passage of emergency vehicles should they take the route on which such cars are double parked and not following emergency vehicles at abnormal speeds in order to take advantage of the clear driving lanes they create or to get to the scene of the emergency to "see the action."

Citizens should never interfere with the operations of emergency vehicles at the scene of the emergency, including standing back from fires, keeping distance from traffic accidents, not slowing down when driving to watch what is happening (this occasionally causes oncoming traffic to crash into these slow-moving vehicles), and not parking near the scene of an emergency in such a way as to interfere with the arrival of additional emergency vehicles or the departure or deployment of present ones.

Citizens should discourage youngsters and other citizens from engaging in acts of vandalism against emergency vehicles. The most common example of this problem is turning in false fire alarms which add to fire fighters' risk of an accident, create additional expenses for the community and taxpayers, and reduce the opportunity for the fire fighters to respond quickly to a real emergency should one be reported while they are chasing a false alarm. (In New York City, for example, fire fighters respond to 70,000 false alarms a year, or nearly 200 a day.) Other examples of vandalism are throwing objects at fire engines and police cars, stealing emergency vehicles and equipment in unattended emergency vehicles.

When assistance is needed, citizens should actively offer it to providers of emergency service care, such as police during an accident in a remote region or isolated part of the community.

After students have identified obligations citizens have toward drivers of emergency vehicles, the class can discuss why people engage in practices which hamper the provision of emergency care and what, if anything, can be done to discourage such behavior.

Evaluation:

Students write a brochure for use by other students or the community on appropriate citizen behavior in the presence of emergency vehicles and appropriate citizen use of emergency transportation services.

Variations and Supplementary Activities:

Students can interview the providers of emergency services and the drivers of emergency vehicles on what they perceive to be the major ways in which the public interferes with the performance of their jobs and steps the public could take to facilitate their task.

In cities, students can, over the period of one or more weeks, take special note of the behavior of the public when emergency vehicles are in operation and compare findings in class.

Students can research the number of false alarms in their community or neighborhood and determine their cost in economic, social, and personal terms to the community and the fire department.

MINI-UNIT 9

BEING SAFE ON VARIOUS VEHICLES

So far we have dealt with the two most common modes of transportation, cars and walking. We have also discussed boating safety, because it is such a hazardous form of recreation. In this unit, we deal with a number of modes of transportation and a number of different vehicles. All of them have their special hazards as well as rules that can make them safer to use.

A good many of the most hazardous vehicles are those used for recreational purposes, like bicycles, which account for a large proportion of injuries requiring treatment in hospital emergency rooms. For almost everybody, recreation involves some kind of transportation, so it is all the more important not to spoil the fun by some unnecessary and perhaps serious accident.

Travel on buses, airplanes, and trains has become so routine for so many people that they find it hard to believe that occasionally problems do arise. Some background knowledge and some forethought can be of tremendous help here.

Among the major concepts treated in this unit are the following:

- The government has certain regulatory responsibilities for all modes of transportation and establishes various kinds of safety rules for all modes.
- Many vehicles, particularly recreational vehicles, depend on the common sense and prudence of the operator for their safe use.
- Peer pressure among young people can add to the dangers of operating recreational vehicles.

MINI-UNIT 9 LESSON PLAN

Being safe on various vehicles

Activity #	*Activities*	*Class Time*
36	DESCRIPTION: Students singly or in groups research what travelers should do and not do in order to be safe on airplanes, trains, buses, and subways. GOAL: To identify safety tips for passengers on all modes, as well as to understand regulations and procedures followed by carriers to minimize hazards.	1-2 periods
37	DESCRIPTION: Students take field trips to railroad crossings to evaluate precautions they and others should take regarding rail safety. GOAL: To be aware of the possible dangers of traveling by rail and of bicycling, driving, or walking near rail vehicles and facilities.	½-1 period
38	DESCRIPTION: Students discuss bicycle safety. GOAL: To know about the potential hazards of bike riding, the rules which should be followed to avoid these hazards, and the reasons these rules have been made.	¼-1 period
39[a]	DESCRIPTION: Students read brochures, instructional materials, and other promotional and descriptive literature about recreational vehicles available from dealers and manufacturers. GOAL: To know different kinds of recreational vehicles and their uses and special dangers.	1-2 periods

[a] This activity also appears in Mini-unit 1.

MINI-UNIT 9 LESSON PLAN (CONTD.)

Being safe on various vehicles

Activity #	*Activities*	*Class Time*
40	DESCRIPTION: Students role play a youngster trying to persuade a parent to buy him or her a minibike. GOAL: To become aware of how feelings can interfere with safety oriented behavior.	½-1 period

Total Class
Time: 3½-7
periods.

ACTIVITY #36

Mini-unit Topic: Being Safe on Various Vehicles

Approximate Class Time: 1-2 periods

Capsule Activity Description: Students singly or in groups do research to learn what travelers should and should not do in order to enhance their safety on airplanes, trains, buses, and subways.

Goal:

To identify safety tips for passengers on all modes, as well as to understand regulations and procedures followed by carriers to minimize hazards.

Concepts Treated:

- It is possible to identify common sense safety procedures that passengers should be responsible for following when traveling on any mode.
- Certain federal agencies have responsibility for issuing safety regulations that must be followed by carriers in various modes and by passengers.
- The carriers themselves have responsibility for developing and following additional safety procedures to insure that all possible hazards will be avoided.

ACTIVITY

Students do research, for various transportation modes, to gather the following information: recommended safety procedures for passengers on the mode; potential hazards connected with the mode; government safety regulations for the carrier and its passengers in each mode; additional safety procedures followed by carriers in the mode.

Students can gather this information by consulting books, magazines, and pamphlets in school and local libraries, and by contacting *safety organizations*, such as the National Safety Council, 425 N. Michigan Avenue, Chicago, Illinois 60611; *private carriers*, such as airlines, intercity and interstate bus lines, and railroads; the *community service divisions* of local transit authorities that run bus lines and rapid transit lines such as BART (Bay Area Rapid Transit in San Francisco, California) and MARTA (Metropolitan Atlanta Rapid Transit Authority in Atlanta, Georgia); and *professionals* in your community who have a responsibility for transportation safety, such as policemen, the manager of a local airport, bus drivers, airline pilots or stewards, or the safety director of the local bus company. Students may also write to appropriate Federal agencies responsible for transportation safety, such as the Federal Aviation Administration (Washington, D.C. 20591), the Federal Railroad Administration (Washington, D. C. 20590), and the Bureau of Motor Carrier Safety, Federal Highway Administration (Washington, D.C. 20590), for interstate business. Students should be cautioned, however, that the task of these agencies is to write safety regulations for the industries they regulate. While some of the regulations do relate to passengers' behavior, most Federal regulations are quite technical and are directed at the private carriers.

In doing their research, students will want to seek answers to such questions as these:

1. What common-sense safety tips can you suggest for passengers travelling on your mode?

2. Are you aware of any government safety regulations that passengers on your mode must follow?

3. Are there any state or local laws that regulate travelers' behavior and what were designed to enhance their safety?

4. Are there any safety tips, regulations, or laws concerning baggage that travelers should be aware of, when using your mode?

5. Are there any potential hazards on your mode which travelers can minimize or avoid by following certain safety tips? (What are the hazards? What are the appropriate safety tips?)

6. Concerning the potential hazards that you just mentioned, what safety regulations have been issued by the Federal government to minimize these dangers?

7. What additional procedures does your carrier follow to minimize each of these dangers?

Students report the results of their research and the class utilizes the information to prepare a chart that will illustrate potential hazards and suggested safety procedures for passengers. Some entries on the chart, for example, might look like this:

Transportation Mode	*Potential Hazards*	*Safety Procedures Passengers Must Follow*	*Safety Regulations Carriers Must Follow*	*Additional Safety Procedures Instituted by Carrier*	*Additional Safety Tips for Passengers*
Airplanes	Turbulent air	Fasten seat belts when instructed	File flight plan	Use of radar to detect bad weather	Keep seat belts fastened at all times
Trains	Being hit by approaching train while waiting on station platform	Stand back of of white line	Observe speed limits going through station	Warn passengers of approach over public address system	Do not lean over tracks to look for approaching train
Buses	Collision	Refrain from distracting driver's attention by talking	Obey applicable traffic laws	Use headlights at all times	Notice emergency exit and whether windows can be pushed out in emergency

Evaluation Method:

Each student selects one mode and writes a brief fact sheet of safety tips for a passenger about to travel on that mode.

Variations and Supplementary Activities:

Students discuss and evaluate the answers they found to Questions 6 and 7 in the list above. Discussion can center on these points: Do they consider the government's safety regulations to be adequate? Do they consider the carrier's additional safety procedures to be adequate?

Students research and report on procedures followed by Federal agencies in issuing safety regulations, focusing particularly on discovering how citizens can participate in the rule-making process.

ACTIVITY #37

Mini-unit Topic: Being Safe on Various Vehicles

Approximate Class Time: ½-1 period, plus out-of-class time

Capsule Activity Description: Students take field trips to a railroad crossing to evaluate precautions they and others should take regarding rail safety.

Goal:

To be aware of the possible dangers of traveling by rail, and of bicycling, driving, or walking near rail vehicles and facilities.

Concepts Treated:

- Railroad crossings are the site of many pedestrian and driver accidents and fatalities.
- There are precautions citizens can take to avoid accidents at railroad crossings and facilities.
- Some railroad crossings and facilities could be renovated to make them safer for pedestrians and drivers.

ACTIVITY

Either individually, in small groups, or as a class students begin this activity by identifying some of the safety aspects of railway crossings prior to visiting these sites. Items to observe can include

1. What barriers exist to prevent cars from crossing railroad tracks when a train is approaching?
2. How much advance warning is given to drivers and pedestrians?
3. What kind(s) of warning(s) is given?
4. Is the warning such that small children can understand what it means?
5. Can pedestrians, bicyclists, or cars get around the barriers and are they likely to be tempted to try to?

After developing their list of safety items to observe, students visit one or more railroad crossings, taking notes on what they observe. Following the trips, students discuss what they saw, agree on any safety hazards encountered, and develop recommendations for remedying them which can be presented to appropriate government and railway authorities.

Evaluation:

Students write a paragraph or two indicating how they would insure safety whenever railroad traffic has to cross a road which carries automobile, bicycle, and pedestrian traffic.

Variations and Supplementary Activities:

Students can interview automobile drivers and pedestrians who they know frequently pass over railway crossings [preferably the one(s) the students visited] about how safe they feel these crossings are and whether they have ever nearly been in an accident at a railroad crossing.

Students can investigate the possibility of providing total barriers at railroad crossings and separate grades.

Students can discuss why freight yards and railroad tracks are so appealing as play areas, and why some children enjoy throwing rocks at trains and buses. Class can also identify what steps are taken and should be taken to prevent or discourage children from playing in freight yards and on railroad tracks and from throwing objects at trains and buses.

Students can interview appropriate railway authorities about the number of accidents occurring at railway crossings and subway stations in their community, what causes them, and what can be done to prevent them.

ACTIVITY #38

Mini-unit Topic: Being Safe on Various Vehicles   **Approximate Class Time:** ¼-1 period

Capsule Activity Description: Students discuss bicycle safety.

Goal:

To know about the potential hazards of bike riding, the rules which should be followed to avoid these hazards, and the reasons these rules have been made.

Concepts Treated:

- Careless bike riding can be very dangerous, leading to a wide variety of potentially serious, or even fatal, accidents and injuries.
- Bicycle safety rules, if followed carefully, can prevent serious bike accidents; such rules include obeying normal traffic regulations, using or wearing special equipment, making an effort to concentrate on what the other fellow is doing on the road, and being sure to keep your bicycle in good condition.

ACTIVITY

Conduct a class discussion on bicycle safety. Such a discussion should consider this basic information about numbers, types, and causes of bicycle related accidents in the United States. There are 100 million bicycles currently in use. Bicycle sales reached 14.1 million in 1974. In that year, more bicycles were purchased than automobiles. It is expected that half the nation's population will be bicycle riders by 1980. Bicycle accidents cause the most injuries requiring emergency ward treatment each year (460,000). There are 1 million bicycle-related injuries a year, including 60,000 concussions and 120,000 fractures. Bicycles cause over 1,000 deaths each year--3 per day. Twenty percent of bike accidents occur in rural areas. Approximately 26 percent of bike fatalities occur at night. Two-thirds of bicycle deaths involve children aged 5 to 14. Bicyclists are not protected in spills or crashes, while auto drivers are.

For safe bicycle riding, obey the laws. Ride with the traffic; riding against the traffic can result in running into cars coming out of driveways and roads, because auto drivers do not check for traffic coming down the wrong-way side of the street, and running into doors opened from parked cars for the same reason. It can also cause running into cars on curves, since car drivers will hug the inner side of the road and cannot see a bike rider (nor can the bike rider see the car) until it is too late; and compounding the speed of the car and the bike if they collide. Further safety rules include the following. Do not speed; speeding limits the reaction time a bicyclist needs in order to avoid colliding with pedestrians or vehicles, or skidding on glass, sand, and potholes. Signal all turns, so that cars don't run into you as you turn. Don't hitch rides with other vehicles. Don't ride side-saddle or on the handlebars. Don't weave in and out of traffic.

Optional equipment can increase safety. Use lights, reflectors, and light-colored clothing, especially when riding at night; the French two-way armband is especially good and so are vests made for bikers in highly visible "day-glow orange" fabric. Consider wearing a bicycling helmet, especially if you ride in heavy traffic. Slow down in rainy weather to avoid skids (wet leaves are especially dangerous); brakes, especially caliper ones, function poorly in wet weather. Wear clips over long pants to keep cuffs from catching in gears; make sure shoelaces are short for the same reason. Avoid traffic whenever possible. Don't ride two or more abreast on the road; keep single file. Avoid bicycles with high handlebars and small wheels--they are involved in a large percentage of accidents because they are less stable. Avoid trying tricks such as "wheelies" (riding on rear wheel only) and "jumpies" (slamming on the brakes so the bike will fly through the air). Do not ride a bicycle with a frame that is too small or too large for you. Do not ride between lanes of vehicular traffic.

While riding, watch out for cars coming out of driveways and side streets. During sunsets and rainy days, be especially careful of cars because they may not be able to see you. Watch out for sudden moves by pedestrians. Listen for cars coming up behind you. Look out for opening doors on parked cars. Watch out for potholes, drains, sand, and glass. Be especially careful and observant at intersections.

Maintain your bike carefully. Keep hand brakes properly adjusted. Be certain that gears are shifting freely. Keep tires properly inflated; check tires before each ride.

In an emergency, a bike registration may help police to contact your parents or other relatives; also may help to recover a lost or stolen bike.

Class discussion can follow on such issues as why many riders commonly ignore many of these safety rules and what can be done to encourage riders to practice these rules.

Evaluation:

Each student writes a first-person "autobiographical" account of a bike trip that involves as many safe riding practices as possible. Students exchange papers and one student identifies all the safety items included in the other student's paper.

ACTIVITY #39*

Mini-unit Topic: Being Safe on Various Vehicles

Approximate Class Time: 1-2 periods and out-of-class time

Capsule Activity Description: Students examine and report on brochures, instructional materials, and other promotional and descriptive literature about recreational vehicles available from dealers and manufacturers.*

Goal:

To know different kinds of recreational vehicles and their uses and special dangers.

Concepts Treated:

- As in all transportation-related accidents, an accident with a recreational vehicle depends on the persons involved, the machine, and the environment.
- Off the road operation of a vehicle is no guarantee against accidents.
- Gasoline is always a dangerous substance.
- Vehicles that are used mainly in winter add the dangers of snow and ice to those of operation.

ACTIVITY

Either by visiting retail dealerships, writing to manufacturers of recreational vehicles, or both, students collect literature describing snowmobiles, trailers, mopeds (motorized bicycles) campers, and dune buggies. The class then breaks into small groups set up around different manufacturers of the same vehicle (e.g., campers) or around different types of recreational vehicles and compares what their materials have to say about the safety considerations involved in purchasing, using, and maintaining these vehicles. Each group may have to break into evan smaller groups (or one-person subcommittees) to get further information from dealers, manufacturers, or state agencies on some of the questions listed below.

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*This activity also appears in Mini-unit 1.

- For what types of activities can the vehicles be used?

- What are the potential dangers of each of these activities? (Hazards can include not only dangers of vehicle-related injury, but also exposure, freezing, getting lost, being trapped by sudden changes in weather, and mechanical breakdowns.)

- What are the performance capabilities and limitations of each vehicle researched? For instance, a jeep type vehicle often has a high center of gravity, and may not be appropriate for very steep grades.

- What types of support from civilization do these vehicles require, such as gasoline, water, plumbing facilities, and electricity? Are there risks associated with being cut off from these services or materials?

- What kinds of precautions are needed when fueling the vehicle?

- What options are available for purchase with each vehicle and what are their safety implications? Do they increase the likelihood of mechanical failure? Do "luxury" features increase or decrease the safety of the vehicle?

- How useful, and how safe, are the vehicles as basic transportation? (Students can consider brakes, tires, maneuverability, visibility, comfort, degree of driving fatigue, gasoline consumption, and ease with which a small person can drive the vehicle.) Are there safety features that are required for automobiles which are not required for some recreational vehicles?

- Are special skills needed to operate any of these vehicles? If so, how can these skills be learned?

- Do any of these vehicles operate in a hostile environment (water, snow, cold weather)? If they do, does this require any special precautions?

- Are there any minimum performance standards which these vehicles should meet (as regards, for example, horsepower, speed, weight, and durability)?

- What safety equipment should be carried with each vehicle? (For example, considering the safety implications of the various types of gas cans, flares, chains, shovels, and blankets.)

- How much emphasis is placed on safety, how much information is provided about safety features, and what warnings are provided about safe operation in the promotional literature for these vehicles?

- What are your state's laws concerning the purchase, registration, licensing, and use of each recreational vehicle?

If there are discrepancies among the various manufacturers with respect to standard and optional safety equipment and features, groups discuss why such variations exist and do further reserach (with manufacturers, local and state agencies, and in library) to ascertain factual accuracy of claims in various brochures.

Each group prepares a report which is given orally to class. Class discussion then centers on evaluating utility and safety of the various kinds and models of recreational vehicles.

Evaluation:

Students role play a customer entering a retail store selling recreational vehicles and question a salesperson about the safety features and safe operating procedures for different recreational vehicles.

Variation and Supplementary Activity:

Students can invite salespersons and mechanics to class to explain the safety aspects of the recreational vehicles they sell or service.

ACTIVITY #40

Mini-unit Topic: Being Safe on Various Vehicles **Approximate Class Time:** ½-1 period

Capsule Activity Description: Students role play a youngster trying to persuade a parent to buy him or her a minibike.

Goal:

To become aware of how feelings can interfere with safety-oriented behavior.

Concepts Treated:

- Minibikes are only for off the street use.
- Peer pressure is one of the factors that makes youngsters ask for things like minibikes.
- Parents sometimes have a duty to say "no."
- A minibike on a public street is inherently unsafe, no matter how safe the street may be.

ACTIVITY

Students role play scenarios in which parents are asked by their children to buy a minibike for them. Sample role profiles are provided following the activity. After each role play, participants read their role profiles to the class and discuss the feelings they had while role playing. Non-participants discuss what they would have said and done had they been involved. Class should be encouraged to write its own role profiles after using ones provided.

After completion of role plays, class summarizes the safety considerations which were raised by "parents" and "children" about minibikes. Use the following information, taken from a U.S. Department of Transportation news release, to supplement the students' discussion.

Background

The minibike--unlike the family automobile--is sold for *off the road* use. It is seldom a registered vehicle, since many states do not register vehicles under a certain weight or wheelbase. Seldom is the minibike rider qualified in experience or age for a driver's permit. The minibike sold for use off-the-road is not covered by Federal motorcycle safety standards, nor is it covered by the automobile insurance coverage commonly written to cover motor vehicles for highway use.

Finally, there exists no technical definition of a minibike, which is accepted from state to state or from city to city. The Motorcycle Industry Council suggests the following definition: A minibike is a two wheel vehicle with wheel rims of less than 10 inches in diameter, or a hub-to-hub wheelbase of less than 40 inches, or an engine rated at less than 45 cc, or a set height of less than 25 inches from the ground.

What Are the Dangers of Minibike Use?

Most minibike fatalities and injuries, according to information published by the U.S. Department of Transportation, occur in collision with other vehicles--*motor vehicles on the streets and highways*. Since estimates conclude that three-fourths of all minibikes are used off the highways, as they should be, the implication is very clear: that injury and death result when the young rider takes to the highway on his minibike. Among the reasons are these:

- Minibikes provide a low profile and small size. Together with usually inadequate lights, the young rider is hard to spot in traffic and often unseen by the motorist in time to avoid a collision.

- The minibike is noted for its poor handling characteristics. Experts state its inherent faults to be small wheels, short wheel base, and minimal capacity in both braking and acceleration.

- Used on the highway or street each of these shortcomings heightens the risk of injury. Inadequate acceleration, especially, renders the minibike unable to enter traffic safely to keep pace. Its low visibility and poor handling characteristics complete the picture--a lethal environment for the experienced cyclist and a deadly combination for the 8-14-year-olds who foolishly risk it.

The Do's and Don'ts of Minibike Use:

DO

- DO make sure your mini-biker has an off-road area--a legal and safe area--in which to ride. Given the minibike but no authorized, off-road opportunity to ride, his use of the street and highway is inevitable (although illegal).

- DO make sure that experienced, off-road instruction is available. Parents are urged to join or to form among themselves minibike clubs and organizations which sanction enjoyable training or riding events.

- DO require that a safety helmet and sturdy shoes and clothing be worn at all times while riding. A recent study indicates that of all motorcycles fatalities, in the sample studied, up to two-thirds sustained skull fractures.

- DO inquire from your insurance carrier what additional coverage is needed to fully protect the minibike rider and *you* from liability.

DO NOT

- DO NOT allow any use, whatever, of the minibike on streets, highways or sidewalks.

- DO NOT permit the minibike to be loaned to inexperienced friends or neighbors.

- DO NOT assume a vacant, off-road area is necessarily a legal riding area. Many property owners hve closed their lands to cyclists and minibike riders. Inquire, first.

- DO NOT scrimp or short-change safety in the matter of a *good* safety helmet, or sturdy, protective clothing for the rider. Even the experts take an occasional "spill." Your attention to the right equipment will minimize the risk for your young rider.

- DO NOT assume that your automobile or homeowners insurance coverage will automatically give adequate protection to you or your minibiker. Usually added protection is called for.

Evaluation:

Students interview minibike salespersons and police officers on safety problems of driving minibikes and compare findings.

Sample Role Profiles

Son/Daughter

You are thirteen years old and have outgrown your bicycle. But rather than ask your parents to buy you a new bicycle, you want them to get you a minibike. Two of your friends have them, and if you have only a bicycle, you won't be able to keep up with them when they go riding. Besides, you'll feel like such a jerk riding around on your bicycle while your friends tear by you on their minibikes. You know that your parents think mini-bikes are dangerous, but you've had no accidents on your bicycle, so why should have have any trouble on a minibike? Besides, even though you live on a busy street, there are parks nearby and lots of sidewalks where you could use it safely. Besides, you know your parents can easily afford the cost of a minibike. Your parents are in the kitchen having coffee. What do you say to them?

Parent

Your son/daughter has been riding around on a bicycle that has become much too small. You've been expecting to hear him/her any day now tell you to buy him/her a new bicycle. But you're a little concerned that he might want a minibike, because two other kids in the neighborhood have them. You feel that minibikes are really dangerous, especially since you live in a suburb with a fair amount of traffic. You can well afford to buy a minibike, but you're ready to refuse to buy one because of the dangers involved. You son has never been in a serious accident on his bicycle, so you know you may have difficulty making him see your point. You son has just come into the kitchen while you are having coffee looking very much like he is about to ask you for a favor.

Son/Daughter

You live in a small town and really know how to enjoy life and impress your friends. For some time now, you've had a terrific bicycle with a banana seat, high handlebars, a roll bar, and a five speed stick shift. But now that you've turned twelve, you have your sights set on something even better: a minibike. Just yesterday you saw five brand new ones in the local motorcycle store. You've saved up enough money to pay for half the cost. You can hardly wait to get it so you can race by your friends and leave them in a cloud of dust! There's no traffic on the side streets, so it would be safe to drive one. You've decided to ask your parents to split the cost of the minibike with you. You're afraid they might refuse, because they don't trust you too much these days, ever since you were caught shop-lifting a pack of gum with your friends in Sam's Grocery. You parents are having coffee in the kitchen. You decide to ask for the bike. What do you say?

Parent

You have a twelve year old son/daughter who is pretty wild sometimes. A few months ago he was caught stealing some gum in the town grocery store. Nothing happened, but you suspect he's also been getting involved in drugs, although you can't prove it. A week ago you were walking by the town motorcycle shop where you saw some minibikes in the window. Now you're afraid that's the next thing he'll want to get after the souped bicycle you bought him a year ago.. You son has been working after school and on weekends at the grocery store carrying bags, and saving money. You know that even if your son can't afford to buy a minibike on his own right now, he will be able to save up enough money to do so in a while. You're really frightened that he will get hurt driving a minibike, even though there's not much traffic on the side streets. You've decided to put your foot down and refuse him permission to buy one. But here he comes now, while you are having some coffee in the kitchen, with that "I-wanta-get-a-new..." look on his face. What will you say if he asks to get a minibike?

New role profiles can be created by varying

- The age and sex of the children
- The type of recreational vehicle they want (e.g., snowmobile, dune buggy)
- Why they want a minibike
- What neighborhood conditions will affect the safety of using a minibike
- What in the child's background or personality indicates he/she will drive a minibike safely or dangerously

MINI-UNIT 10

PROMOTING TRANSPORTATION SAFETY THROUGH CONSUMER/CITIZEN ACTION

One of the greatest forces for safety in transportation is a concerned and informed citizenry. Citizens who are concerned about the safety of their children, for example, while they walk to school or while they take the bus to school will usually be successful in having safety measures implemented, such as the provision of crossing guards, installation of traffic lights, or lowering of speed limits.

What can a citizen do to promote transportation safety and how should he or she go about doing it? This mini-unit introduces the student to some of the forms of consumer action and how they can be used to urge governmental agencies to become alert to safety problems and do something about them. Not all safety hazards are amenable to such action, of course; if a citizen is to be effective in promoting transportation safety, he/she must learn what can and what cannot be accomplished by a given agency.

Among the concepts treated in this mini-unit are:

- Citizens can influence governmental agencies that write regulations affecting transportation safety.
- Citizens can participate in transportation planning.
- Citizens can write to a variety of agencies charged with promoting and enforcing safety standards and rules.
- Safety projects, like all projects funded by taxes, have to compete with other worthwhile projects.

MINI-UNIT 10 LESSON PLAN

Promoting transportation safety through consumer/citizen action

Activity #	*Activities*	*Class Time*
41	DESCRIPTION: Class discusses the merits of different types of personal, social, and political actions citizens and citizen groups can take to promote automobile safety. GOAL: To know the different kinds of actions that are available to individual citizens who are concerned about transportation safety.	1½-2 periods
42	DESCRIPTION: Students role play funding agencies discussing priorities for financing different types of community safety programs. GOAL: To understand the competing considerations that must be evaluated before a program can be funded.	½-2 periods

Total Class
Time: 2-4
periods.

ACTIVITY #41

Mini-unit Topic: Promoting Transportation Safety Through Consumer Action

Approximate Class Time: 1½-2 periods

Capsule Activity Description: Class discusses the merits of different types of personal, social, and political actions citizens and citizen groups can take to promote automobile safety.

Goal:

To know the different kinds of actions that are available to individual citizens who are concerned about transportation safety.

Concepts Treated:

- Citizens can influence governmental agencies that write regulations affecting transportation safety.
- Citizens can participate in transportation planning.
- Citizens can write to a variety of agencies charged with promoting and enforcing safety standards and rules.
- Citizens can speak out about safety.
- Citizens can make written statements about safety.
- Citizens can take legal action to promote safety if appropriate and necessary.
- Citizens can take peaceful direct action to impress authorities with their concern about safety.

ACTIVITY

The teacher begins this activity by discussing the three elements involved in traffic safety: man, machine, and environment. "Man" includes all the human factors involved in driving safety, such as concentration, skill, and attitudes. "Machine" refers to the car--the safety features it provides. "Environment" takes in all the surrounding natural and man-made things which impinge on both the automobile and the driver, such as roads, obstacles to clear vision, billboards, and weather conditions. Even though two of these three traffic safety elements promote driving safety, the third can easily by itself make driving dangerous. For example, a careful driver using a perfectly conditioned car may still crash when driving on ice. A careful driver, in excellent weather, is still in danger if his car has brakes which are about to fail. And, of course, a beautiful, clear day and a finely tuned car do little to ensure traffic safety with a drunk driver. Thus the consumer's focus should be on all three safety elements if he is to travel as safely as possible in a car.

However, for a given safety problem, the citizen must select which of these three factors he can most easily and effectively change and concentrate his attentions there. For example, citizens can do a great deal about controlling their own safety and habits as drivers and passengers. They can have some effect on changing the environment to conform to safety needs by participating in tranportation planning activities and hearings and making their influence felt on those government and private agencies which are responsible for environmental conditions.

Citizens can also further the safety of the automobiles they drive by maintaining them in safe operating condition. They can also have some impact on the safety features automobile manufacturers design into their automobiles and safety options they make available. Here consumers can exert both economic pressure (not purchasing unsafe cars) and political pressure (writing congresspersons urging the passage of appropriate safety legislation).

Following this introductory discussion, the class can consider, in small groups or as a whole, the merits and drawbacks of the following potential types of citizen action.

One can write letters or engage in petition campaigns directed at regulatory agencies (Federal, state, local), such as National Highway Traffic Safety Administration (NHTSA), Federal Aviation Administration (FAA), Civil Aeronautics Board (CAB); at politicians, such as Congressmen, Senators, executives (President, mayor, governor, or town manager); at local transportation agencies, such as mass transit authorities, port authorities, departments of public works, department of highways; at state departments of transportation; at local consumer protection agencies; at media (TV, radio, newspaper) "Action Lines"; and at the editor of the local newspaper. Such campaigns may be designed to achieve strong or stronger legislation on such issues as speed limits for cars, snowmobile use, auto traffic in the inner city, incentives for use of carpools, use of highway trust fund and other sources for financing mass transit, new highway construction, billboards, manufacture or purchase of large cars, speed minimums for autos, and free or inexpensive public transportation.

One can create publicity to educate the public on the issues suggested above, by means of advertisements, editorials, and feature articles in local newspapers, monthly city magazines, newsletters of community groups and unions; lectures; fact sheets and leaflets; demonstration projects; and radio and television public service announcements.

Giving talks to clubs and organizations--fraternal societies (Elks, Masons, etc.), youth groups (Boy/Girl Scouts, etc.), civic groups (Kiwanis, Rotary) and *organizing meetings* with public and private officials, government agencies, and private companies to encourage them to adopt specific actions or discontinue current practices in order to increase travellers' safety can also be effective.

Individuals can participate in transportation planning through such actions as becoming involved in the planning of Federal-aid highway projects. The Federal Highway Administration (FHWA) works with state highway agencies to ensure that community organizations and individual citizens are actively encouraged to participate in the planning and design of Federal-aid highway projects.*

Under the Federal-aid program, state highway agencies initiate, plan, design, build, and operate highway projects. (The FHWA provides financial assistance and guidance and is responsible for certain key approvals.) Each state highway agency has formulated a community involvement program--part of the state's action plan--which explains the procedures that are followed.

In addition to community involvement programs, each action plan explains how social, economic, and environmental factors are identified and studied, how the assistance of a wide range of professional skills is obtained and utilized, and how consideration of all feasible alternatives is assured in the highway planning process. Copies of action plans are available from state highway agencies or can be examined in their offices.

Action plan programs for community involvement include opportunities for interested citizens to participate in the planning and design process. In addition to public hearings, most states place emphasis on public meetings. Frequently such meetings are conducted as workshops, run with the assistance of local officials and agencies. In many instances coordination meetings are held with local officials prior to the public meetings.

Under state action plans, mailing lists are maintained to provide early notification and continued information to known interest groups and individuals. Concerned citizens may contact their state highway agencies and ask to have their names placed on these mailing lists.

Evaluation:

Students write a brief fictional story about how a citizen or citizen group attempted to take action to promote driving safety and what happened.

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*For further information write for copies of *Getting Involved in Transportation* (U.S. Department of Transportation, Office of Consumer Affairs, 400 7th and D Streets, S.W., Washington D.C. 20590).

ACTIVITY #42

Mini-unit Topic: Promoting Transportation Safety Through Consumer Action

Approximate Class Time: ½-2 periods

Capsule Activity Description: Students role play funding agencies discussing priorities for financing different types of community safety programs.

Goal:

To understand the competing considerations that must be evaluated before a program can be funded.

Concepts Treated:

- There are usually more worthy programs than can be funded.
- Sometimes programs are funded (or not funded) for reasons that are not made explicit.
- Among the competing considerations are availability of money, assignment of credit for the program, the portion of the community that will benefit from the program, who will be hurt by the program.
- In addition to financial benefits and costs, the personal and social benefits of a program must be evaluated.

ACTIVITY

Prior to engaging in this activity, students discuss the concept of "cost-benefit analysis." Cost-benefit analysis involves answering the questions: "How much will it cost to achieve specific benefits?" and "Are the benefits worth the cost?"

Students should examine not only the financial, but also the social and personal costs and benefits of a program. For example, what would it cost to design and manufacture a car that was crash-proof? Who would pay the costs? What would the benefits be from such a development: how many lives would be saved, how many injuries avoided, how much money saved in medical, insurance, and repair expenses? Before promoting a safety measure, citizens need to consider the cost-benefits of the measure they are advocating to determine whether their goal is worth seeking.

Students then volunteer to play officials of a funding body which has been given a specific amount of money and must select among two or more community safety programs which one to fund. Role profiles and safety programs to discuss are given at the end of the activity.

Evaluation:

Students identify two needed safety programs in their own community and orally or in writing indicate which one should be funded and why.

Variations and Supplementary Activities:

Students can write their responses to the situations described in the role profile instead of role playing them.

The selection of available programs which students can "fund" can be restricted to those relating to only one transportation safety area, such as automobile driving, boating safety, or emergency vehicles.

Sample Role Profile

Distribute copies of role profile to three or more students.

> You are in a meeting with two other politicians. The three of you are part of the Transportation Safety Committee of the State Senate (City Council, Town Meeting) which is responsible for making recommendations to the Senate (City Council) about transportation safety issues. You have to decide how to spend the 40,000 dollars you have left over at the end of the year's budget, because the money cannot be saved and cannot be spent on anything but transportation safety. You know your community badly needs three improvements in the area of safety. The amount of money you have available, however, can fund only one program. The meeting has just begun. What do you say the money should be spent on?

Teacher or students select three of the following choices or develop ones of their own.

1. Department of Motor Vehicles program to make sure second-hand car dealers are not selling cars which are safety hazards
2. A public education program on safety considerations people should keep in mind when purchasing a new or second-hand car
3. A public education program informing citizens about how to maintain and service their cars to ensure driving safety
4. Stricter police enforcement of the speeding, reckless driving, and other automobile safety laws, including paying officers overtime for this purpose
5. A public education campaign to encourage drivers to drive safely
6. A state law or local ordinance requiring people to wear seat belts and paying police overtime to enforce the law
7. A public education campaign on the importance of wearing seat belts
8. A watchdog commission, with testing facilities, to evaluate the safety of new model cars and report its findings to the public
9. Overtime pay for department of motor vehicles staff to re-test all automobile driver license holders every five years
10. Institution of a state automobile inspection system
11. Revision of the oral or written driver license test or the road test to include additional questions and exercises related to driving safety

12. Replacement of traffic signs and traffic barriers (fences, highway dividers) with breakaway materials

13. Construction of pedestrian facilities (underpasses, sidewalks, railings)

14. Removal of dangerous curve in a local road or highway, construction of an underpass at the hazardous intersection of two local streets, etc.

15. Purchase and staffing of a patrol boat to enforce boating safety on Lake Capsize and provision of emergency service

16. Institution of a boating safety inspection program

17. Purchase of two (three, one) police ambulances (a new fire engine, an emergency helicopter)

18. Establishment of a first-aid training program for ambulance drivers and attendants

19 . Development of public education campaign on the availability of emergency transportation services and how to use them

MINI-UNIT 11

DOING SUPPLEMENTARY RESEARCH ON TRANSPORTATION SAFETY

This unit consists of five activities that require the students to conduct research. Most of these activities require considerable amounts of out-of-class time as well as at least two class periods. They are meant for those students who like to do individual research projects and can benefit from them. Some of these activities can be used for extra credit; others will be useful for students who are a little older than the remainder of the class. Often, the entire class will be able to benefit from the research, if the student or group of students who have done the research report their findings to the class.

Most of the research activities deal with topics that are covered in the preceding mini-units, but do so in more depth. Topics include safety belts, pedestrian safety, boating safety, and emergency vehicles. A new topic that is touched on for the first time in this mini-unit is the importance of car maintenance as a safety factor.

The major concepts treated are those that appear in the preceding mini-units. For the activity dealing with maintenance (#44), the major concept treated is

- Maintaining a car not only makes it run better, but also contributes to safety.

Activity #46, dealing with boating safety, also gives the student an opportunity to become acquainted with the uses and pitfalls of statistics.

The research which the students produce serves as evaluation; hence no separate evaluation methods are proposed.

MINI-UNIT 11 LESSON PLAN

Doing supplementary research on transportation safety

Activity #	*Activities*	*Class Time*
43	DESCRIPTION: Students discuss what types of persons might be most inclined or resistant to wearing safety belts. They then poll these people to test their theories. GOAL: To learn what factors incline people to wear safety belts.	1½-2 periods
44	DESCRIPTION: Students question automobile mechanics concerning regular maintenance that car owners themselves can perform or should have garages perfrom in order to keep their cars running safely. GOAL: To know (1) when cars need maintenance services, (2) which services an owner himself/herself can perform, and (3) which services require the skills of an experienced mechanic.	2-3 periods
45	DESCRIPTION: Students research the attitudes of automobile drivers and pedestrians toward each other. GOAL: To be aware of the contradictory attitudes which drivers and pedestrians have toward each other.	2 periods
46 Spirit Masters #9, 10, 11	DESCRIPTION: Students examine official (Coast Guard) tables on boating accidents and interpret them, making use of graphs, charts, and written explanations. GOAL: To understand from statistical evidence what are the most frequent kinds and causes of boating accidents.	1-1½ periods

MINI-UNIT 11 LESSON PLAN (CONTD.)

Doing supplementary research on transportation safety

Activity #	*Activities*	*Class Time*
47	DESCRIPTION: Students identify the emergency services available in their community and the reason for which each is used. GOAL: To know what emergency services are available in one's own community.	1 period

ACTIVITY #43

Mini-unit Topic: Researching Transportation Safety

Approximate Class Time: 1¼-2 periods, plus out-of-class time

Capsule Activity Description: Students discuss what types of persons might be most inclined or resistant to wearing safety belts. They then poll these people to test their theories.

Goal:

To learn what factors incline people to wear safety belts.

Concepts Treated:

- Knowledge that safety belts contribute to safety does not necessarily result in people actually wearing them.
- Relation between having been in an accident and wearing safety belts.
- Right of the government to impinge on people's freedom for the sake of their safety.

ACTIVITY

Students begin this activity in small groups by identifying what types of persons they consider most likely to wear safety belts and be favorably disposed toward their use and which types of people would be hostile. Types of people students can speculate about include people who have been in serious automobile accidents, teenagers, parents of small children, women, men, the elderly, or people with the most education.

In addition to speculating on which of these groups, if any, is most likely to wear safety belts, students also discuss what their reasoning is for their speculations. Then each group develops a poll by which to test their theories. A sample poll may be found at the end of the activity. Each group then divides up responsibility for conducting the survey and proceeds to interview a reasonable number of respondents.

After completing their interviews, the groups analyze their findings, drawing appropriate correlations between the answers and the types of persons who responded. Groups present their findings to the class and comparisons between the groups' findings are made. Follow-up discussion takes place around one or more of the following questions:

1. Did the polls confirm the students' predictions about the types of people most likely to wear safety belts?
2. If not, what might account for the poor predictions?
3. If so, what might explain why some groups wear belts more often than others? (Or, if there were no differences in seat belt use or in attitudes toward safety belts between the groups polled, what might account for the uniformity of behavior and attitudes?)
4. If all the groups may have the same behavior and attitudes, do the groups have *different reasons* for their similar behavior and attitudes?
5. Based on the poll results, are any groups of people most likely to be particularly responsive or hostile to suggestions to use seat belts?
6. Are certain individuals likely to wear seat belts based on certain personality traits? For example, are people who tend to be submissive and obedient more likely to wear them? Are people who are very orderly and methodical more likely to wear them than disorganized people?

Variations and Supplementary Activities:

Students can poll the public on when people are most likely to use safety belts--for example, at high speeds, for long distances, on turnpikes, in snow or rain or darkness, with passengers (what kind?).

Students can develop their poll around other safety practices, habits, and attitudes in addition to or instead of around safety belt use.

Sample Poll on Safety Belt Use and Attitudes

Sex: M_____ F_____

Age: 5-10 ___ 11-15 ___ 16-21 ___ 22-29 ___ 30-59 ___ 60 and over ____

Are you the parent of any children under twelve? Yes ____ No ____

Did you graduate? High school ____ Junior college ____ College ____

Do you have a driver's license? Yes ____ No ____

Have you ever been in a serious automobile accident? Yes ___ No ___

1. Do you normally wear seat belts when you are driving an automobile?

   Yes ____ No ____

2. Do you normally wear seat belts when you are the passenger in a car?

   Yes ____ No ____

3. When you are driving a car, do you normally suggest to your passengers that they buckle up?

	Yes	*No*
If passenger is your child:	___	___
If passenger is your friend:	___	___
If passenger is your spouse:	___	___
If passenger is your parent:	___	___
If passenger is your girl/boyfriend:	___	___

4. If you do not normally use seat belts, why don't you?

   ____

   ____

   ____

5. If you normally wear seat belts, what do you think of people who don't?

____

____

____

6. Do you believe there should be a law requiring drivers and passengers to wear seat belts? Yes ____ No ____

7. Do you believe that cars should be built so that they cannot start unless every driver and passenger has his or her seat belt fastened?

Yes ____ No _____

ACTIVITY #44

Mini-unit Topic: Researching Transportation Safety

Approximate Class Time: 2-3 periods, plus out-of-class time

Capsule Activity Description: Students question automobile mechanics concerning regular maintenance that car owners themselves can perform or should have garages perform in order to keep their cars running safely.

Goal:

To know (1) when cars need maintenance services (2) which services an owner himself/herself can perform, and (3) which services require the skills of an experienced mechanic.

Concepts Treated:

- Maintaining a car properly is a definite contribution to safety.
- Some maintenance tasks can be performed by the owner or operator.
- Some maintenance tasks must be performed by an experienced mechanic with the proper tools.
- Proper maintenance prevents breakdowns and can save money.

ACTIVITY

Students develop a questionnaire and ask mechanics what maintenance car owners themselves should perform to keep their cars running safely and when cars should be taken to mechanics for maintenance and repairs to ensure safe driving.

The class divides into small groups and each group develops its own questionnaire. The groups can then either administer their own questionnaires or as a class develop a master questionnaire that every group uses. Each group also identifies mechanics in the community whom the students can interview. A sample questionnaire follows this activity.

After administering the poll, students compare results and develop a master list of maintenance tasks related to safe driving and divide them into two categories: tasks which the average owner can do and tasks for which a trained mechanic is necessary. Students discuss whether and how people can be motivated to maintain their cars regularly.

A committee is appointed to research and report back to the class on these questions: What are your state's requirements for automobile inspection? How often must cars be inspected? What parts are inspected? What tasks must automobile perform during inspection? Class compares state's requirements with their own master list of maintenance tasks related to safe driving.

Evaluation:

Students role play confrontation between a mechanic and a car owner about a maintenance task. The mechanic insists it must be done or the car won't be safe to operate; the owner claims that the task is not necessary and that the mechanic is simply trying to get money out of him.

Variations and Supplementary Activities:

Using the chart on the next page as a guide, students develop a test to administer to other students about maintenance and safety. One test might simply consist of listing some or all of the items in the left-hand column (repair needed) and ask the person who takes the test what the risk is if the repair is not made.

Students can invite mechanic to class to explain the relationship between maintenance and safety and what maintenance tasks should be performed to keep cars running safely.

Students administer the questionnaire to students and faculty in the school's automotive department.

AUTOMOBILE MAINTENANCE AND SAFETY CHART

Repair Needed	*Risks Involved*	*Further Explanation*
Tires with little or no tread	Skidding, especially in wet weather Blow-outs	Should be 1/4 inch of tread on all parts of each tire, including spare
Inoperative horn	Inability to signal other cars	
Noisy muffler	Carbon monoxide poisoning Difficulty hearing other vehicles	
Broken windshield wiper Poorly operating wiper	Impaired visibility	Combination of rain, darkness, and faulty windshield wipers is particularly dangerous.
Improper tire pressure	Skidding, especially in wet weather Blow-outs, especially over-inflated tires in hot weather at high speeds Uneven braking	Purchase of pocket tire air pressure gauge can be well worthwhile in terms of convenience. Keep it in glove compartment.
Faulty heater	Inability to melt snow on windshield Carbon monoxide poisoning Distraction of being too cold to drive safely	Particularly in winter, a faulty heater is dangerous when windows are kept closed.
Rusted tailpipe	Carbon monoxide poisoning	May require getting down on the ground and looking underneath the car.
Broken headlight or tail light	Poor visibility at night Inability to signal other cars	Periodically have someone watch while you test lights or get out and walk around car yourself.
Broken directional signal	Inability to signal other cars	Same as above
Unbalanced wheel alignment	Difficulty in steering	Can detect this by over-steering tendency when you drive.
Low brake fluid	Brake failure	Ask mechanic to check for this or read owner's manual and do it yourself.
Inoperative or poor parking brake	Parked car on an incline "running away"	

Sample Questionnaire of Mechanics on Car Maintenance and Automobile Safety

1. What regular maintenance tasks are necessary to keep a car running safely--for example, replacing tires which have no tread left?

2. What kinds of accidents take place because regular maintenance work was not performed on a car?

3. Which maintenance tasks related to safety can the average car owner perform him- or herself?

4. How often or when should each of these maintenance tasks listed in question 1 be performed?

5. In your experience, do car owners tend to have this kind of maintenance work performed regularly or do they wait until something happens which forces them to have it done?

6. Why do you think drivers who do not regularly keep their car in safe running condition fail to do so?

ACTIVITY #45

Mini-unit Topic: Researching Transporation Safety

Approximate Class Time: 2 periods, plus out-of-class time

Capsule Activity Description: Students research the attitudes of automobile drivers and pedestrians toward each cther.

Goal:

To be aware of the contradictory attitudes which drivers and pedestrians have toward each other.

Concepts Treated:

- All automobile drivers at some point are also pedestrians.
- A great many pedestrians are also at some time automobile drivers.
- People's attitudes and behaviors are different when they drive from what they are when they walk.
- Streets and roads are public facilities where both drivers and pedestrians have certain rights, unless otherwise indicated.
- Having the legal right of way is not necessarily protection against an accident.

ACTIVITY

Either individual students or small groups of students draw up questions to ask of either automobile drivers or pedestrians in each case, concerning the behavior of the other. You may suggest that they begin by brainstorming for questions (if more than one student engages in this activity) before going off by themselves to develop their questionnaires.

Automobile Drivers:

1. Have you experienced any problems driving when there are pedestrians on the road?

2. What exactly have the problems been?

    Not seeing them--daytime   nighttime
    Having to slow down
    Having to pull out of lane to pass
    Pedestrians darting out at intersections or from between parked cars or side streets
    Pedestrians walking on the wrong side of the road
    Afraid pedestrians will do something unexpected

3. How do you feel these problems should be solved?

    Keep pedestrians off the roads
    Build protected sidewalks
    Arrest pedestrians walking illegally
    Scare them by driving close to them or honking the horn
    Other solutions

4. Do you feel pedestrians have equal, more or less rights with cars on the roads? Why?

Pedestrians

1. Have you experienced any problems walking when there are cars on the road?

2. What exactly have the problems been?

    Cars driving too close to person
    Cars not stopping to let person cross street
    Driving too fast so endangering pedestrian safety
    Discourteous driving (driving through puddles getting pedestrians wet, rushing pedestrians to cross street)
    Fear of drunk drivers

3. How do you feel these problems should be solved?

    Increased police protection
    Stiffer penalties for drivers who endanger the safety of pedestrians
    More and better protected pedestrian facilities
    Yelling at drivers who are driving to endanger
    Other

4. Do you feel automobile drivers have equal, more or less rights with pedestrians on the roads? Why?

Once the questionnaire has been developed, students give it a dry run by administering it to their friends or parents.

Each group decides whom to interview. Students administering the poll to pedestrians should attempt to interview people at all age levels. Those students working with automobile drivers have a somewhat more limited population, but should try to interview drivers at all age levels. People easily interviewed in the community include: friends, classmates, brothers and sisters, relatives, neighbors, teachers, etc. Groups should also decide if they want to make correlations such as: Are the pedestrians ever automobile drivers (and vice versa)? and Do their views change when their positions are reversed? Are opinions correlated with age and sex?

After completing interviews, groups collate results and make correlations. Groups analyze findings in terms of how to educate automobile drivers to be careful toward pedestrians and how pedestrians should walk to avoid accidents with automobiles.

Each group prepares a report and presents it to the class, responding to comments and questions from the class and the teacher.

The reports are compared and guidelines are drawn up based on the group findings for both pedestrians and automobile drivers to prevent accidents.

ACTIVITY #46

Mini-unit Topic: Researching Transportation Safety **Approximate Class Time:** 1-1½ periods

Capsule Activity Description: Students examine official (Coast Guard) tables on boating accidents and interpret them, making use of graphs, charts, and written explanations.

Goal:
To understand from statistical evidence what are the most frequent kinds and causes of boating accidents.

Concepts Treated:

- Most boating accidents are caused by people.
- Most boating accidents occur when the water is calm and the weather is clear.
- More accidents happen on lakes than in the ocean.
- Collisions are the most common accident in boating.
- Capsizing causes more deaths than any other kind of accident.

ACTIVITY

Give the class tables from the official publication *Boating Statistics,* published annually by the Coast Guard. Tables from the 1974 publication are presented on Spirit Masters #9, 10, and 11. Either singly, or in groups, students then examine the tables and write down their conclusions about what they show. The conclusions may be in the form of a paragraph or two of writing, or may consist of graphs and charts. Most likely, both writing and charts will be needed.

Things that should how up in the students' reports are these:

From 1970 to 1973, the total number of accidents went up each year; in 1974 it went down. A graph might be employed to show the rate of increase and decrease. Students may want to investigate whether this trend was true for all of the individual states, as well as for the country as a whole. A useful exercise might be to draw a graph for the total number of accidents (by year) and then to draw lines that show the number of accidents (by year) for the states that had the most accidents: California, Florida, New York, Michigan, Texas, and perhaps a few others. Also included might be the home state of the students, if it is not one of the ones otherwise listed. In most cases, but not all, 1974 showed a decrease in accidents.

The total number of accidents can then be further investigated to see what kinds of accident most frequently occurred and which kind was the most serious (i.e., resulted in the most fatalities or injuries). Of the 5,104 accidents reported in 1974, by far the largest number (1,500) involved collisison with another vessel. Capsizing was the second most common accident (778). Almost tied for third place were fires or explosions of fuel (366) and falls overboard (362). Also notable is the fact that collisions did not go down in 1974. More vessels were involved in collisions than in any other accidents; the total number of vessels involved in 1974 (2,845) was just slightly less than the number involved in 1973 (2,853). As far as results of accidents go, collisions were not as serious as some other kinds of accidents: More fatalities were caused by capsizing than any other kind of accident; the next most likely cause of death was fall overboard. In injuries, collisions again lead as the cause, but most property damage is caused by fires or explosions of fuel.

The table relating weather and water conditions has some interesting information: More accidents happen on nontidal waters (i.e., lakes and ponds) than elsewhere; most accidents happened when the water was calm, not when it was rough, and when the weather was clear rather than cloudy. (A possible interpretation might be that in bad weather and rough water boaters are less likely to be out and those who are on the water probably exercise greater care than at other times.)

ACTIVITY #47

Mini-unit Topic: Researching Transportation Safety

Approximate Class Time: 1 period, plus out-of-class time

Capsule Activity Description: Students identify the emergency services available in their community and the reasons for which each is used.

Goal:

To know what emergency services are available in one's own community.

Concepts Treated:

- Different kinds of services exist for different kinds of emergencies.
- Availability of services depends on a number of factors such as size of community, time of day service is needed, frequency with which a certain kind of emergency is encountered.
- Quality of emergency service depends on such factors as response time, training of personnel, availability of backup systems.

ACTIVITY

Students in small groups or as a class research the availability and quality of various types of emergency vehicles in their community, including ambulances, police cars, fire engines, boats, and helicopters. Research can include one or more of the following methods:

- Brainstorming
- Seeking information from the teacher
- Interviewing appropriate community resources, including school nurse or doctor, family doctor, police officers, fire fighters, ambulance drivers, operators of ambulance services, including morticians
- Local government agency officials in departments of public health
- Local Red Cross chapters

- Observing and examining ambulances, boats, helicopters, and fire engines in the community

- Requesting literature concerned with emergency care. Such information may be obtained from

Government Agencies

Health Services Administration, U.S. Department of Health, Education and Welfare. Parklane Building, 5600 Fishers Lane, Rockville, MD 20852

National Highway Traffic Safety Administration, U.S. Department of Transportation. 400 7th St., S.W., Washington, DC 20590

Professional Organizations

International Association of Chiefs of Police, 11 Firstfield Rd., Gaithersburg, MD 20760

International Association of Fire Chiefs, 1725 K St., N.W., Washington, DC 20006

National Ambulance and Medical Services Association, 1435 G St., N.W., Washington, DC 20005

National Sheriffs' Association, 1250 Connecticut Ave., N.W., Washington, DC 20036

Private Groups

The American Red Cross, 17th & D Sts., N.W., Washington, DC 20006

Students can also seek information about the availability and quality of services provided by transportation vehicles:

Ambulance Service: Availability

- Number of companies who provide service__________

- Number of ambulances in the community__________

- Number of companies providing 24-hour service__________

- Areas of the community without nearby service

  ____

  ____

  ____

- Number of companies providing immediate service in ten minutes or less__________

- Usual amount of time elapsing between request for ambulance and time of arrival__________

Ambulance Service: Quality

- Number of companies which provide emergency medical technicians with ambulance service__________
- Number of companies who provide attendants with first aid training along with ambulance__________
- Number of companies which provide in their ambulances
  - Oxygen__________
  - Suction equipment (aspirator)__________
  - Two-way radio service__________
  - Resuscitator__________
  - Cardiac monitor__________

Police Emergency Services: Availability

- Location of nearest police stations

____

____

____

- Number of police cars available on each shift
  - Day__________
  - Evening__________
  - Night__________
- Number of stations with police ambulances__________
- Total number of police ambulances available__________

Police Emergency Services: Quality

- Number of police officers with training in first aid__________
- Safety equipment provided in police cars
  - Oxygen__________
  - Resuscitator__________
  - Suction equipment (aspirator)__________

Stretcher__________

Blankets__________

Basic first-aid equipment (gauze, scissors, etc.)__________

- Average amount of time elapsing between time of request for help and time of arrival at scene of emergency____________

After determining the availability and quality of emergency services, the class discusses when to use each service and how to contact it. Generally the when and how of using emergency vehicle services depends on the availability and quality of services in the community rather than on any hard and fast rule such as "Always call the police for help in an emergency involving an injury." Whom to call will depend on who provides emergency services in a given community and which agencies provide the best care.

Variations and Supplementary Activities:

Students can develop an "ideal" emergency vehicle system and then compare their "ideal" system with the system operating in their community. Discuss how the "ideal" system would be funded and how the community system is paid for.

Class can divide into small groups with each group responsible for researching the nature and quality of a different emergency service in the community.

Two realistic paperback novels by a police officer and a fire fighter, respectively, can be read for insight into the types of emergencies in addition to crimes and fires to which they respond:

The New Centurions, by Joseph Wambaught (Dell)

Report from Engine Co. 82, by Dennis Smith (Pocket Books)

Students can write stories involving the absence of one or more emergency services--for example, describe what might happen in a town without fire fighters, police officers, or ambulances.

ASSESSMENT ACTIVITIES

Three activities are included in this group. Activity #48 may be used to ascertain students' interests and concerns about transportation safety. You may wish to use it at the beginning of the course to find out what your students really want to know about in this area.

Activity #49 should be used after the course has been completed. It asks a series of questions designed to discover whether in the students' eyes the objectives of the course have been met.

Activity #50 consists of a total of 48 essay questions, which ask students about various topics treated in the mini-units. You will want to use as many or as few as are suitable to your students. Of course, you will want only to use those questions dealing with mini-unit topics that your class has covered. These questions are merely suggestions; you may very well prefer to make up your own questions in order to evaluate your students' progress.

ASSESSMENT ACTIVITIES

LESSON PLAN

Activity #	*Activities*	*Class Time*
48	DESCRIPTION: Students answer questions about their interests and concerns in the matter of transportation safety. GOAL: To assess students' interest in, and concern with, transportation safety.	½-1 period
49	DESCRIPTION: Students answer questions about the course. GOAL: To learn whether course or unit objectives have been met.	½-1 period
50	DESCRIPTION: Students answer questions on transportation safety. GOAL: To evaluate student learning.	½-1 period

Total Class Time: 1½-3 periods.

ACTIVITY #48

Mini-unit Topic: Assessing Students' Interest in and Knowledge of Transportation Safety

Approximate Class Time: ½-1 period

Capsule Activity Description: Students answer questions about their interests and concerns in the matter of transportation safety.

Goal:

To assess students' interests in, and concerns with, transportation safety.

ACTIVITY

Students answer questions designed to reveal their concerns about transportation safety. Sample questions appear on the following pages. You may wish to prepare other questions.

Attitude tests should be anonymously answered to allow students to feel free to express their real feelings. Students should be told in advance that there are no right or wrong answers.

Variation and Supplementary Activity:

You can ask students to write anonymous answers to questions designed to reveal their concerns about transportation safety. Sample questions can include the following:

1. What personal safety problems have you or your friends experienced while driving, walking, boating, etc.? What, if anything, did you or they do about these dangers?
2. What, if anything, are you concerned to learn about how to avoid transportation hazards? Be specific.

3. Mention briefly some of the different feelings some people you know have toward safe driving. Are you interested in finding out what caused such attitudes?

1. Do you have any problems with any of the following travel issues? (Check all that apply.)

	No Problems	*Some Problems*	*Many Problems*
Wearing seat belts			
Getting someone else to wear seat belts			
Riding with dangerous drivers			
Unsafe automobiles			
Unsafe boats			
Unsafe roads and highways			
Safe walking			
Pedestrian facilities (sidewalks, crosswalks, "Walk/ Don't Walk" signs)			
Walking to school			
Boating			
Getting an ambulance			
Getting police cars to come quickly			
Knowing when to call an ambulance			
Railroad crossings			
Playing on railroad tracks and in railroad yards			
Bus drivers			
Taxi drivers			
Airplane flying			
Dune buggies			
Campers			
Other			

2. The best way(s) to solve these problems is/are (check all that you agree with):

☐ Most of them cannot be solved

☐ By passing laws to make people drive, etc., safely

☐ By building safer cars, boats, etc.

☐ By educating people to be careful

☐ By getting more salespersons and mechanics who are honest

☐ By building better roads, sidewalks, etc.

☐ Other (specify):

3. A unit on transportation safety could help me most if it:

Dealt with the following specific safety topics (specify):

Let me study what I want, but helped me to do so by (specify):

Used the following teaching methods (check all that apply):

☐ Art

☐ Audiovisual

☐ Debates

☐ Discussions:

  ☐ Small group

  ☐ Class

☐ Field trips

☐ Field work games

☐ Independent study

☐ Interviews

☐ Lectures

☐ Peer teaching

☐ Polls

☐ Reading

☐ Research

☐ Role plays

☐ Volunteer work

☐ Writing

ACTIVITY #49

Mini-unit Topic: Assessing Interest in and Knowledge of Transportation Safety

Approximate Class Time: ½-1 period

Capsule Activity Description: Students answer questions about the course.

Goal:
To learn whether course or unit objectives have been met.

ACTIVITY

This activity should come after one or several mini-units on transportation safety have been completed.

Students write responses to questions designed to help reveal to them and to the teacher whether the course objectives were achieved and, insofar as they were not, how they can be achieved in the future. Answers should be anonymous.

Sample questions appear on the following page.

After answering questions, class can discuss in small groups or as a class the value of the course and how to improve it based on the students' written responses.

Course Evaluation Questions for Students

1. What did you gain from this course? Check as many or few of the following as apply:

   ☐ Only a review of well known facts

   ☐ A few new, useful facts

   ☐ Much new useful information

   ☐ Better understanding of mini-unit topic(s)

   ☐ Desire to go more deeply into study of mini-unit topic(s)

   ☐ Some new and important attitudes toward transportation safety

   ☐ Changes in my personal behavior or my reactions to other people's travel behavior

   ☐ Other (explain briefly):

2. From which part of the study do you feel you learned well?

   ☐ Preparation of homework assignments

   ☐ Individual reading

   ☐ Oral reports

   ☐ Written reports

   ☐ Lectures

   ☐ Role plays

☐ Games

☐ Individual projects

☐ Guest speakers

☐ Debates

☐ Small group discussions

☐ Class discussion

☐ Field trips

☐ Audiovisual aids

☐ Other activities (list):

3. What is your opinion concerning the amount of time spent in this study?

☐ Too much ☐ Too little ☐ About right

4. Which audiovisual aids were of most value?

5. From which books and pamphlets did you learn the most?

6. From which games did you learn the most?

7. From which role plays did you learn the most?

8. What questions or topics had you hoped would be included in the study but were not?

9. What suggestions do you have for improving the course?

10. Do you feel that there was unnecessary repetition in material covered in this class and material covered in another class or classes? If so, what material?

11. What do you think are the greatest needs in transportation safety?

12. After having considered very carefully what you have learned during this course, have you changed your mind concerning your personal use of vehicles and transportation facilities? If so, how?

ACTIVITY #50

Mini-unit Topic: Assessing Interest in and Knowledge of Transportation Safety

Approximate Class Time: ½-1 period

Capsule Activity Description: Students answer questions on transportation safety.

Goal:
To evaluate student learning.

ACTIVITY

A series of questions on various aspects of transportation safety appears on the next pages. You will want to select and use those questions which treat aspects of transportation safety that have been covered in the mini-units which you and your students have studied.

You can also have the students develop their own questions either individually or in small groups.

Each activity in the mini-units has its own evaluation built into the behavioral objective preceding the activity description. You can use the following questions to supplement (or replace) those evaluation methods.

1. Many people drive dangerously even when they know what they are doing is unsafe. What are some of the reasons people continue to do unsafe things despite the obvious dangers?

2. Given the fact that many people continue to drive dangerously even though they know what they are doing is unsafe, are there ways these people can be encouraged to drive safely?

3. What are some good methods by which to cope with pressures from friends who drive dangerously?

4. What are the common driver habits which make driving dangerous--habits which have nothing to do with driving skills?

5. Should passengers riding in cars driven by someone who is driving dangerously inform the driver of what he or she is doing and ask him or her to drive safely? Why or why not? Give some examples of when you feel a passenger should complain and when he or she should not.

6. Should drivers of cars with passengers who are making it difficult for them to drive safely ask such passengers to stop engaging in distracting or otherwise dangerous behavior? Why or why not? Give some examples of when you feel a driver should complain to passengers and when he or she should not.

7. What are the common reasons people give for not wearing seat belts? Which, if any, of these reasons are good ones and why? Which, if any, are bad ones and why?

8. If more people wore seat belts, what would the results be in terms of the number of type of accidents and deaths due to automobile crashes? How would these effects relate to seat belt use?

9. Should people encourage each other to use seat belts? Why or why not?

10. How can people encourage other people to use seat belts?

11. What specific effects can alcohol have on a person's ability to drive safely?

12. What is "blood alcohol concentration"? How is it tested?

13. Approximately how many people are killed every day in all types of traffic accidents? With how many of these deaths do social drinkers who have been drinking play a part? How many of these accidents involve problem drinkers?

14. What would you do and why in any two of the following situations?

    (a) Your best friend is about to drive with a drunk driver.

    (b) You are about to drive with a drunk driver.

(c) You are already riding with a drunk driver.

(d) You have just caught your son or daughter drinking and then driving.

15. Do certain kinds of people drive more safely than others--for example, women? Do some groups drive more dangerously--for example, teenagers? If so, what might explain these differences?

16. What considerations should an automobile purchaser take into account in order to buy the safest possible car?

17. What special considerations does the purchaser of a second-hand car need to consider in order to buy a safe automobile?

18. To what extent is safety emphasized in automobile advertisements? What accounts for its emphasis or lack of emphasis?

19. When people buy automobiles, what are some of the reasons they have for what car they purchase which have nothing to do with safety? Which, if any, of these reasons can lead people to buy cars which are not as safe as some other cars?

20. What questions should an automobile purchaser ask car salespersons about the safety record and features of the automobile(s) they are considering buying?

21. If you had a young child, how would you teach him or her to be a good pedestrian?

22. What are the best methods for coping with pressures from friends to walk unsafely?

23. Discuss what you think is the one most important quality or skill needed to be a good pedestrian and why.

24. Using your community or neighborhood as an example, describe good or bad pedestrian facilities and what can be done to make them better.

25. Why is it important to maintain a boat properly? Why does good maintenance contribute to safety?

26. You are in command of a motorboat, with two passengers. Suddenly, one of them falls overboard. What do you do?

27. You are in command of a sailboat, with two passengers. Suddenly, one of them falls overboard. What do you do?

28. Describe what the Coast Guard Auxiliary is and what its members do to promote boating safety.

29. What actions can citizens take which will facilitate the provision of emergency care by operators of emergency vehicles?

30. Give an example of an emergency call which should be placed to a police station, one to a fire station, and one to an ambulance company. Why should each call be made to that particular source of emergency help?

31. How can drivers of automobiles assist drivers of emergency vehicles?

32. What emergency vehicle service do citizens contact when they want to be sure of getting a quick response? When should this source of help be contacted and when should a different source of help be contacted?

33. To what extent are ambulance drivers in most communities trained to provide emergency care?

34. Discuss the advantages and dangers when emergency vehicles speed to and from the scene of an emergency.

35. What safety measures should people keep in mind when they consider buying a recreational vehicle? Do these considerations differ from those safety considerations purchasers of automobiles should keep in mind?

36. You are teaching your son or daughter how to ride a bicycle. You know that he (she) will not be able to remember more than two or three safety rules at any one time.

    (a) Which two or three safety rules will you teach first?

    (b) Why will you teach those first?

37. Taking care of a bicycle is useful because it makes the bike last longer. What things can you do in taking care of a bike that will also make it safer to ride?

38. What are the special dangers related to using snowmobiles, minibikes, and dune buggies?

39. What are the major safety regulations passengers should follow when flying on an airplane? Which of these regulations are announced by flight attendants?

40. What safety precautions can passengers take when riding on buses?

41. What safety precautions should people take when walking or driving across railway crossings? What precautions should they take in railway stations? on passenger trains?

42. What regulatory agency or agencies are responsible for regulating airplane safety? What rules have they made? How do they enforce them? Are there safety measures which they should promote or enforce which they have not as yet required airlines to follow?

43. What are the dangers and advantages of hitchhiking?

44. Should the government regulate how people drive, purchase, and maintain their cars? Why?

45. Should the government require the wearing of seat belts? Why?

46. If the government required the wearing of seat belts, would most citizens obey the law? Why?

47. What has Ontario's experience with seat belt legislation been? What might the results be in the United States if similar legislation were passed here? Why?

48. Should states require semiannual or annual automobile inspections? Why?

BIBLIOGRAPHY

The Bibliography section is divided into four subsections, one each for Automobile Safety, Pedestrians, Boating, and Other Vehicles.

Within each of these four categories the individual bibliographical entries are divided into

1. Teacher materials

2. Student materials

3. Audiovisual materials

The individual entries in the teacher, student, and audiovisual sections are presented in the following format:

	Title of Work, author, date of publication. Number of pages or list of materials. Price.
Type of material	Description of material with evaluation of material's quality (except for audiovisual materials, and supplementary materials) and relevance for transportation consumer education.
	Source from which material may be obtained.*

It should be kept in mind that the inclusion of a bibliography item is an estimation of the material's quality and relevance.** As such, the absence of a teaching material does not per se indicate the material is poor. It may be excellent but simply not very relevant.

The teacher, student, and audiovisual materials have been numbered consecutively.

Following the teacher, student and audiovisual materials is a list of readings for teachers by which to learn the necessary background to teach about transportation safety and a list of relevant periodicals for use by teachers and students alike.

At the end of the Bibliography is a list of government agencies which can be contacted for further information about transportation safety.

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*People who order materials from the Government Printing Office (U.S. Superintendent of Documents) should allow ten weeks for delivery.

**A complete discussion of the criteria used to evaluate the materials may be found at the end of the Bibliographies.

AUTOMOBILE SAFETY

Teacher Materials

Selected Youth Safety Resources, 1968. 34 pages. Free.

Catalogue

Annotated but not evaluated list of written and audiovisual materials on a variety of safety topics, including automobile safety.

National Safety Council
426 North Michigan Avenue
Chicago, Illinois 60611

National Safety Council Catalogue. 85 pages.

Catalogue

Comprehensive catalogue on all aspects of safety, including driver education and traffic safety. Included are listings of booklets, manuals, films, filmstrips, and posters.

National Safety Council
444 North Michigan Avenue
Chicago, Illinois 60611

Safety Belt Instructional Package for Driver Education, 1972. Four pamphlets, 8, 13, 35 and 25 pages. Free, 15¢, 20¢, 25¢.

Guide

Four factual presentations about seat belt use and on teaching about their use. Designed for use in driver education classes, but could be used in other settings. Useful factual information for teachers and students, but classroom approach is not exciting. Pamphlets include (1) an overview on teaching about safety belt use (*Safety Belts: a Recommendation to Driver Educators*); (2) an *Instructor Guide* with suggested classroom activities in very brief form, objectives and a film list; (3) an *Automobile Safety Belt Fact Book* that treats important issues such as motivating factors in safety-belt usage and "selling" the safety-belt habit; also contains good bibliography; and (4) a *Safety Belt Instruction Booklet* that is a brief and unimaginative programmed instruction text.

Department of Transportation
National Highway Traffic Safety Administration
400 7th Street, S.W.
Washington, D.C. 20590

Alcohol and Alcohol Safety, 1972. (7-9: Vol. 1: 289 pages; Vol 2: 236 activities.) $11.75.

Guide

Comprehensive curriculum manuals on all aspects of alcohol use, with considerable attention paid to drinking and driving. The set has two volumes, one a curriculum manual, the other classroom activities. The activities are detailed and constitute the heart of the curriculum. They are creative and designed to achieve behavioral objectives in this highly affective field. An extensive bibliography on alcohol and traffic safety is provided in each set, including classroom materials and teacher guides.

Superintendent of Documents
Government Printing Office
Washington, D.C. 20402
Order No's.:

5003-00085, 5003-00089: Jr. High

Student Materials

The New Look in Traffic Signs and Marking, 1972. 19 pages. 35¢.

Pamphlet

Sprightly, multicolored pamphlet describing motor vehicle, pedestrian, bicyclist, etc., signs, signals, and pavement markings. Profusely illustrated.

Superintendent of Documents
U.S. Government Printing Office
Washington, D.C. 20402
Stock Number 5001-0027

Safety Belt Instructional Package for Driver Education, 1972. 8, 13, 35, and 25 pages. Free, 15¢, 20¢, 25¢.

Pamphlet

Four pamphlets of facts about seat belt use and on teaching about their use. Designed for use in driver education classes, but can be used in other settings. Useful factual information for teachers and students, but classroom approach is not exciting. Pamphlets are: (1) overview on teaching about safety belt use (*Safety Belts: a Recommendation to Driver Educators*); (2) an *Instructor Guide* with suggested classroom activities in very brief form, objectives, and a film list; (3) an *Automobile Safety Belt Fact Book* that treats important issues such as motivating factors in safety belt usage and "selling" the safety-belt habit; also contains a good bibliography; (4) and a *Safety Belt Instructional Booklet* that is a bland programmed instructional text, very brief and not very imaginative.

Superintendent of Documents
U.S. Government Printing Office
Washington, D.C. 20402
Stock Nos. 5003-0068, 5003-0080, and 5003-00077.

The Story of Traffic Control, Ross R. Olney. 72 pages.

Book A history and description of the many devices that control the flow of people and vehicles moving from one place to another (e.g., automobile regulations, control of pedestrian traffic, sea traffic, rail and air traffic). Also a look into the future of traffic control--automated highways, radar-controlled cars.

Prentice-Hall, Inc.
Englewood Cliffs
New Jersey

Jobs in Transportation, Genevieva Gray, 1973. 95 pages.

Book A discussion of the many and varied jobs which are dependent on transportation and are responsible for the safe and efficient movement of goods and passengers.

Lothrop, Lee and Shepard Co.
105 Madison Avenue
New York, NY 10016

Your Wheels--How to Keep Your Car Running, Chet Cunningham, 1973. 127 pages.

Book How to make your car a better and safer vehicle.

G. P. Putnam's Sons
New York

Auto Mechanics, an Introduction and Guide, A. Edward Little, 1974. 115 pages.

Book A basic explanation of how various parts of an automobile function.

Franklin Watts, Inc.
New York

Instructor Guide, 1972. 2 pages. 15¢.

Bibliography

Instructor guide on safety belt use that has two pages describing relevant films. Annotated with sources for rental or purchase and length provided.

Superintendent of Documents
U.S. Government Printing Office
Washington, D.C. 20402
Stock No. 5003-00080

National Directory of Safety Films, 1971. 60 pages. $3.59.

Catalogue

Capsule descriptions of safety films that can be rented from the National Safety Council; however, none are evaluated and many included are poor or mediocre. The reader must take "pot luck" and preview all films ordered before using with students.

National Safety Council
425 N. Michigan Avenue
Chicago, Illinois 60611

Traffic Safety Education Films (not dated). 2 pages. Free.

Catalogue

Annotated list of films on traffic safety, from freeway driving to alcohol-traffic safety.

Contact nearest American Automobile Association (AAA)
office or
AAA Foundation for Traffic Safety
1712 G Street, N.W.
Washington, D.C. 20005

PEDESTRIAN SAFETY

Teacher Materials

Traffic and Pedestrian Education Systems, 1973. 37-page Leader's Guide, 23 spirit masters, 15 cassette tapes, 15 filmstrips. $86.00.

Module Comprehensive multimedia unit covering all aspects of pedestrian safety for youngsters, including crossing streets, selecting safe routes to school, care with railroad tracks, and the meaning of signs. Behavior in cars and bicycle riding are also covered. Unit consists of fifteen modules. For each module the following are provided: audio-tape geared to filmstrip; "immediate reinforcement activities" consisting of suggested activities such as songs and children's games; discussion topics; 1-2 activity masters--activities consist of coloring exercises; and supplemental reinforcement activities such as reading poems, making wall murals, creating trains out of cartons, role plays, and children's games. Activities are creative but not always detailed. Sheet music for nine songs is provided. Tapes have music, singing, and dialogue. General approach is injunctive and cognitive, but many activities present the opportunity for more open-ended and affectively oriented classroom experiences. Filmstrip and spirit masters use ethnic minorities but are very middle class.

Elisar Research Corporation
15 East 48th Street
New York, New York

Urban Pedestrian Accident Countermeasure Experimental Evaluation: Volume 1: Behavioral Evaluation Studies, 1975. 107 pages. $4.25.

Study Somewhat technical study of the extent to which nine pedestrian safety countermeasures effectively reduced pedestrian accidents and how to prevent them.

National Technical Information Service
5285 Port Royal Road
Springfield, Virginia 22151

A New Look at Pedestrial Safety, 1975. 16 pages. Single copies free.

Pamphlet Brief analysis of pedestrian accidents, countermeasures that may be taken, and national pedestrian needs.

U.S. Department of Transportation
National Highway Traffic Safety Administration
Washington, D.C. 20590

Student Materials

A-B-C of Pedestrian Safety, 1969. 15 pages. 25¢.

Pamphlet

Discussion for drivers and pedestrians of pedestrian safety. Moralizes too much about what pedestrians and drivers should and shouldn't do. Topics discussed include intersections, night-time and bad weather, youthful and elderly pedestrians. Topics are covered very briefly in a heavy cartoon format that some students may find condescending and childish. Part of a series of ten pamphlets on highway safety.

Channing L. Bete, Co., Inc.
45 Federal Street
Greenfield, Massachusetts 01301

The Story of Traffic Control, Ross R. Olney. 72 pages.

Book

A history and description of the many devices that control the flow of people and vehicles moving from one place to another (e.g., automobile regulations, control of pedestrian traffic, sea traffic, rail and air traffic). Also a look into the future of traffic control--automated highways, radar-controlled cars.

Prentice-Hall, Inc.
Englewood Cliffs
New Jersey

Audiovisual Materials

Traffic and Pedestrian Education Systems, 1973. 37 page Leader's Guide, 23 spirit masters, 14 cassette tapes, 15 filmstrips. $86.00.

Module

Comprehensive multimedia unit covering all aspects of pedestrian safety for youngsters, including crossing streets, selecting safe routes to school, care with railroad tracks, and the meaning of signs. Behavior in cars and bicycle riding are also covered. Unit consists of fifteen modules. For each module the following are provided: audio-tape geared to filmstrip; "immediate reinforcement activities" consisting of suggested activities such as songs and children's games; discussion topics; 1-2 activity sheets that are reproduced for students using spirit masters--activities consist of coloring exercises; and supplemental reinforcement activities such as reading poems, making wall murals, creating trains out of cartons, role plays, and children's games. Activities are creative but not always detailed. Sheet music for nine songs is provided. Tapes have music, singing, and dialogue. General approach is injunctive and cognitive, but many activities present the opportunity for more open-ended and affectively oriented classroom experiences. Filmstrip and spirit masters use ethnic minorities but are very middle class.

Elisar Research Corporation
15 East 48th Street
New York, New York 10017

Transportation Safety Films. 2 pages. Free.

Catalogue

Annotated list of films on traffic safety, from freeway driving to pedestrians.

Contact nearest American Automobile Association (AAA) office or
AAA Foundation for Traffic Safety
1712 G Street, N.W.
Washington, D.C. 20006

BOATING SAFETY

Teacher Materials

Better Boating: a Guide to Safety Afloat, 1973. 79 pages. 65¢.

Guide — Comprehensive guide on primarily motor boating covering types of boats, equipment, navigation, safety, and emergency measures. Well illustrated but completely factual approach. Suggested class activities are not detailed. Student booklets also available.

Better Boating
Outdoor Empire Publishing, Inc.
511 Eastlake Avenue E
Seattle, Washington 98109

Federal Requirements for Recreational Boats. Order #CG-290. Single copies free.

Pamphlet — U.S. Department of Transportation
U.S. Coast Guard
Washington, D.C. 20590

Student Materials

This is the Seal of Safety (Aux-204). Free.

Pamphlet — Description of U.S. Coast Guard Auxiliary. Contains both Auxiliary and Federal equipment standards.

Department of Transportation
United States Coast Guard
(G-BAU)
Washington, D.C. 20590

Basic Canoeing, 1963. 63 pages. 50¢.

Pamphlet — Useful discussion for beginners that deals with the evolution of the canoe, selecting a canoe, accessories, carrying and launching, boarding and debarking, paddling strokes, safety, care and repair, cartop transportation, and artificial respiration.

American Red Cross
17th and D Streets, N.W.
Washington, D.C. 20006
(or local chapter)

Basic Sailing, 1966. 122 pages. 75¢.

Pamphlet Useful discussion that treats the fundamentals of sailing small craft. Topics discussed include sailboat designs, types, equipment, sails, basic racing rules, and rough weather sailing. Illustrated.

American Red Cross
17th and D Streets, N.W.
Washington, D.C. 20006
(or local chapter)

Basic Rowing, 1964. Grades 9-adult. 80 pages. 50¢.

Pamphlet Booklet designed as a reference source for the American Red Cross rowing courses. Well illustrated, it gives basic information on rowing craft, types, materials, equipment, boarding and debarking, rowing, knot tying and use of lines, anchoring, towing, safety and rescue, boat care, and artificial respiration.

American Red Cross
17th and D Streets, N.W.
Washington, D.C. 20006
(or local chapter)

A Pocket Guide for Visual Distress Signals, 1974. Grades 9-adult. 17 pages. Free.

Pamphlet Useful discussion of how boat operators should signal for help in an emergency using hand signals, flags, and special equipment (flares, lights, and radios).

U.S. Department of Transportation
United States Coast Guard
Washington, D.C. 20590

Audiovisual Materials

Suddenly and Without Warning, 1971. 16mm, 6 min., color. $25 purchase; free rental.

Film Movie on safety hazards of falling overboard. Probably the most useful aspect of boating safety in terms of the number of people for whom the problem may arise. Graphic action scenes depict the most common types of falls overboard from pleasure boats. Shows buoyant life-saving devices, their uses, and how to wear them properly.

Rental: Local Coast Guard District Office
Purchase: National Audiovisual Center (GSA)
Washington, D.C. 20409

The SOS Course: An Introduction to Safe Boating. 69 pages of text, sevel pages of instructions, 198 35mm color slides. $28.50 (purchase).

Slides A slide presentation on many aspects of boating safety. Approximately 2 hours in length. Designed to be used as a teaching device by an individual with little or no boating safety experience by employing the slide narrative contained in the SOS Course.

National Audiovisual Center (GSA)
Washington, D.C. 20409

OTHER VEHICLES

Teacher Materials

Pedal On! Mini-units and Learning Activities on Bicycling. A companion volume to this one, similiarly organized. $19.50.

Guide Comprehensive set of classroom activities and supporting materials for the teacher on all aspects of bicycles, but major section treats bicycle safety. Part of the U.S. Department of Transportation series of curriculum guides on transportation consumer education of which this volume on transportation safety is also one.

Abt Associates Inc.
55 Wheeler Street
Cambridge, Mass. 02138

Guide for Leaders: 4-H Bicycle Program, 1971. 19 pages. Free.

Guide Detailed suggestions for 4-H leaders, but equally useful for teachers, on how to teach a unit on bicycles. Guide includes list of study topics, suggested meeting plans (activities using bicycles, outdoors for the most part); suggested riding activities (e.g., balancing, signaling, entering highway), favorite bike games and races; and a bicycle inspection form and quiz. Guide is primarily designed for use outdoors with each student having his or her own bicycle. Guide is primarily designed for use outdoors with each student having his or her own bicycle. Suggested bike games and races have been included in *Ride On!* Activities--riding and meeting plans are generally fairly detailed and useful, but several require teachers who have a good deal of practical knowledge about bicycles.

U.S. Department of Agriculture
Extension Service
Washington, D.C. 20250

Bicycle Safety Program Aids (not dated). Ten pamphlets and three posters. 11¢.

Packet Folder of materials on bicycle safety and use. Included also are a pamphlet to parents on buying their children a bicycle, the results of an AAA survey on the nature and causes of bicycle accidents, a bicycle skill tests pamphlet (well illustrated and described), and a bicycle inspection check list.

The American Automobile Association
1712 G Street N.W.
Washington, D.C. 20006
Stock Number 3289

Student Materials

Minibike Background Information, 1971. 6 pages. Free.

Flyer — Useful discussion of minibikes primarily in terms of safety but also in terms of sales, purchase considerations, and design specifications.

American Automobile Association (AAA)
Traffic Engineering and Safety Department
1712 G Street, N.W.
Washington, D.C. 20006
(or local AAA club)

Bicycling! Periodical. August and September 1972 and July and August 1973.

Periodical — Complete bibliographies of all available books, articles, and periodicals on bicycles are contained in these four issues.

Bicycling!
55 Mitchell Blvd.
San Rafael, California 94903

The Bike Book, Bibs McIntyre, 1972. 262 pages.

Paperback — Excellent discussion of how to buy and maintain and safely ride a bicycle. Unusual chapters deal informatively with how to prevent theft, how to work up to a fifty mile trip, and which accessories "would you really use." Exceptionally good resources section including list of local, state, and national bicycle clubs, racing organizations and clubs, and American Youth Hostel local council offices.

Pyramid Communications, Inc.
919 Third Avenue
New York, N.Y. 10022

Bikes, Stephen C. Henkel, 1972. 189 pages. $1.25.

Paperback — Comprehensive, somewhat establishment account of bike styles, purchasing a bike, learning to ride, maintenance and repair, safety, and having fun. Profusely and very well illustrated. Sections on do-it-yourself maintenance and repairs are especially good.

Bantam Books, Inc.
666 Fifth Avenue
New York, N.Y. 10019

Bike Tripping, Tom Cuthbertson, 1972. Grades 9-adult. 172 pages. $3.00.

Paperback Lively, informative account of how to take bike trips in terms of safety, the weather, where to go, and equipment to carry. Book also discusses learning to ride and purchasing a bike. Illustrated.

Ten Speed Press
Box 4310
Berkeley, California 94704

The Bike Book (not dated). Grades 7-9. 7 pages. Free.

Flyer Illustrated brief tips to youngsters on bicycle maintenance and safety.

National Safety Council
425 N. Michigan Ave.
Chicago, Illinois 60611

Jobs in Transportation, Genevieva Gray. 1973. 95 pages.

Book A discussion of the many and varied jobs which are dependent on transportation and are responsible for the safe and efficient movement of goods and passengers.

Lothrop, Lee and Shepard Co.
105 Madison Avenue
New York, N.Y. 10016

The Story of Traffic Control, Ross R. Olney. 72 pages.

Book A history and description of the many devices that control the flow of people and vehicles moving from one place to another (e.g., automobile regulations; control of pedestrian traffic, sea traffic, rail and air traffic). Also a look into the future of traffic control--automated highways, radar-controlled car.

Prentice-Hall, Inc.
Englewood Cliffs
New Jersey

Minibikes, Gordon Jennings. 91 pages.

Book A guide to buying, riding, and maintaining a minibike.

Prentice-Hall, Inc.
Englewood Cliffs
New Jersey

Audiovisual Materials

Bicycle Rules of the Road. 11 minutes, color, 16mm.

Film A dramatic demonstration emphasizes driver reaction time and the stopping distances of both automobiles and bicycles. Staged collision tests, using slow motion photography, forcibly demonstrates what happens when an automobile impacts with a bicycle at 25 and 47 mph.

National Safety Council
425 North Michigan Avenue
Chicago, Illinois 60611

Bicycle Safety. Color, 35mm.

Film Illustrates where to learn to ride; what rules to follow when riding during the day, at night, and in the rain; how to prevent tire damage; and how to carry packages on a bike.

National Safety Council
425 North Michigan Avenue
Chicago, Illinois 60611

Bicycle Safety Skills. 11 minutes, color or black and white, 16mm.

Film Film stresses idea that safe bicycling habits will carry over into adult driving behaviors.

National Safety Council
425 North Michigan Avenue
Chicago, Illinois 60611

Bicycle Today--Automobile Tomorrow. 10 minutes, color, 16mm.

Film A boy is shown by a motorcycle police officer how he should check his bicycle for mechanical soundness. Children demonstrate the importance of knowing the correct bicycle rules and safety regulations before riding in traffic.

National Safety Council
425 North Michigan Avenue
Chicago, Illinois 60611

Bicycling with Complete Safety. 10 minutes, 16mm.

Film Film on bicycling safety for adults and children.

National Safety Council
425 North Michigan Avenue
Chicago, Illinois 60611

BACKGROUND LITERATURE FOR TEACHERS ON TRANSPORTATION SAFETY

The materials in this section can be of direct assistance to teachers and curriculum developers for obtaining necessary background information in the field of transportation safety in order then to develop curriculum materials and to teach them. It should be noted that most of the materials included in the Student Materials section of the bibliographies may also be read profitably by curriculum developers and teachers to obtain this background information.

The materials are listed alphabetically by author under each transportation topic.

Automobile Safety

Amrine, Michael. *The Safe Driving Handbook.* (Grosset and Dunlap, New York: 1970).

Burby, John. *The Great American Motor Sickness.* (Little, Brown and Company, Boston: 1971).

Fales, Edward D. *Belts On, Buttons Down; What Every Mother Should Know About Car Safety.* Delaconte Press, New York: 1971).

Nader, Ralph. *Unsafe at Any Speed.* (Bantam Books, New York: 1972, revised 1973).

Bicycles

Alth, Max. *All About Bikes and Bicycling.* (Hawthorne Books, Inc., New York: 1972).

Boethling, Bob (ed.). *The Bicycle Book.* Price, Stern, Sloan Publishers, Los Angeles CA: 1972).

Consumer Guide. *Consumer Guide Bicycles: Complete Bicycle Buying Guide.* (Popular Library, New York: 1972).

Coombs, Charles I. *Bicycling.* William Morrow & Company, Inc., NJ: 1972).

Cuthbertson, Tom. *Anybody's Bicycle Book.* (Ten Speed Press, Berkeley: 1971).

Cuthbertson, Tom. *Bike Tripping.* (Ten Speed Press, Berkeley: 1972).

Frankel, Lillian and Godfrey Frankel. *Bicycle Book.* (Sterling Publishing Co., Inc., New York: 1972).

Henkel, Stephen C. *Bikes.* (Chatham Press, Inc., Riverside, CO: 1972).

MacFarlan, Allan A. *The Boy's Book of Biking.* (Pocket Books, New York: 1970).

McFarlane, John W. *It's Easy to Fix Your Bike.* (Follet Publishing Co., Chicago: rev. ed., 1973).

McIntyre, Bibs. *The Bike Book.* (Harper & Row Publishers, New York: 1974).

Wagenvoord, James. *Bikes and Riders.* (Van Nostrand Reinhold Co., Cincinnati, OH: 1972).

Boating Safety

Andrews, Howard L., and Alexander L. Russel. *Basic Boating: Piloting and Seamanship.* (Prentice Hall, Englewood Cliffs: 1974).

Drinking and Driving

1968 Alcohol and Highway Safety Report. (U.S. Government Printing Office: Washington, D.C., 1968).

Bacon, Margaret and Mary Brush Jones. *Teen-Age Drinking.* (Thomas Y. Crowell, New York: 1968).

Bacon, Sheldon D. (ed.). *Studies of Driving and Drinking.* (Rutgers University Center of Alcohol Studies, NJ: 1968.)

Halverson, Guy. *Stop the Drunk Driver.* (The Christian Science Publishing Society, Boston: 1970).

Maddox, George L. and Bevode C. McCall. *Drinking Among Teen-Agers; A Sociological Interpretation of Alcohol Use by High School Students.* (Rutgers University Center of Alcohol Studies, NJ: 1964).

Voas, R.B., and Len Tabor. *The Relationship of Alcohol Abuse to Highway Safety.* (U.S. Department of Transportation, National Highway Traffic Safety Administration: Washington, DC: 1970, Catalogue #H5810165).

Emergency Vehicles

Keller, Harmut. *An Analysis of Freeway Emergency Service Systems.* (National Technical Information Service: Springfield, VA: 1969, Catalogue #AD 695-378).

Recreational Vehicles

Malo, John W. *Snowmobiling: The Guide*. (MacMillan, New York: 1972).

Malo, John. *All Terrain Adventure Vehicles*. (McMillan, New York: 1972).

Thomas, James Lee. *Safe Snowmobiling: Fun Without Damage*. (Sterling Publishing Co., NY: 1971).

Tuite, James J. *Snowmobiles and Snowmobiling*. (Tower, New York: 1971).

U.S. Department of the Interior. *Offroad Recreation Vehicles*. (U.S. Government Printing Office, Washington, DC: 1972).

Wallace, Clark. *The Complete Snowmobile*. (Scribner, New York: 1971).

Wimer, Sally. *The Snowmobiler's Companion*. (Scribner, New York: 1973).

PERIODICALS

Periodicals can be a rich source of information on transportation safety. Even general consumer periodicals, like *Consumer Reports* and *Changing Times,* contain in many issues an article on transportation safety. Unfortunately, it was not feasible to include a definitive list of all relevant periodicals. For example, there are over two dozen on motorcycles alone. It was also impossible to provide here a list of relevant articles that have appeared in the recent past in periodicals. Moreover, the subscriber or reader cannot know in advance when a periodical will print an article that will interest him. Despite these drawbacks, many teachers and students will find it useful to subscribe to or read library copies of periodicals in the expectation that they will discover articles or references to additional materials of immediate relevance to their teaching or research efforts. The more specifically a periodical is related to his particular interest, of course, the more likely is the reader to find relevant materials. Teachers and readers can also consult in libraries the *Reader's Guide to Periodical Literature* for past articles about transportation.

American Motorcycle Association News
5655 North High Street
Worthington, Ohio 43085

Bicycling
119 Paul Drive, Box 330
San Rafael, California 94902

Bike World
Box 366, 2536 Middlefield Rd.
Mountain View, California 94040

Boom in Bikeways
Bicycle Manufacturers Association
1101 15th Street, N.W.
Washington, D.C. 20005

Changing Times
The Kiplinger Magazine
Editors Park, Maryland 20782

Coast Guard Boating Safety Newsletter
Department of Transportation
Office of Boating Safety
400 Seventh Street, S.W.
Washington, D.C. 20590

Consumer Educator
National Association of Secondary School Principals
2101 Sixteenth Street, N.W.
Washington, D.C. 20036

Consumer News
Federal Office of Consumer Affairs
Superintendent of Documents
U.S. Government Printing Office
Washington, D. C. 20402

Consumer Reports
Consumer's Union
256 Washington Street
Mt. Vernon, New York 10550

Mini-Bike Guide
P. O. Box 1880
Huntington Beach, California

Motor Trend Magazine
8490 Sunset Blvd.
Los Angeles, California 90069

New Directions in Bike Safety
Bicycle Institute of America
122 East 42nd Street
New York, New York 10017

Newsletter of the American Council on Consumer Interests
238 Stanley Hall
University of Missouri
Columbia, Missouri 65201

Of Consuming Interest
Federal State Reports
P. O. Box 986
Arlington, Virginia 22216
(703) 527-4950

Road and Track Magazine
P. O. Box 2324
FDR Post Office
New York, New York 10022

Skylights
National Aerospace Education Council
Suite 310
806 Fifteenth Street, N. W.
Washington, D. C. 20005

Sno Goer
1999 Shepard Road
St. Paul, Minnesota 55116

Traffic Safety
The National Safety Council
425 North Michigan Avenue
Chicago, Illinois 60611

Transpo Topics for Consumers
Department of Transportation
Office of the Secretary
Washington, D. C. 20590

GOVERNMENT INFORMATION AGENCIES

For further information about transportation consumer issues, citizens can contact the U.S. Department of Transportation and other agencies listed below:

Agency Name and Address	Telephone Number*
U.S. Department of Transportation 400 7th Street, S.W. Washington, D.C. 20590	Office of Public Affairs 202/426-4321
Office of the Secretary of Transportation	Office of Consumer Affairs 202/426-4520
National Highway Traffic Safety Administration (address above)	Consumer and Public Affairs 202/426-0670
Federal Highway Administration (address above)	Public Affairs 202/426-0648
United States Coast Guard (address above)	Public Affairs 202/426-1587
Urban Mass Transportation Administration (address above)	Public Affairs 202/426-4043
Federal Railroad Administration (address above)	Public Affairs 202/426-0881
Federal Aviation Administration U.S. Department of Transportation 800 Independence Avenue, S.W. Washington, D.C. 20591	Public Affairs 202/426-3883
Interstate Commerce Commission Constitution Avenue and 12th Street, N.W. Washington, D.C. 20423	Consumer Phone 202/343-4761
Federal Trade Commission Pennsylvania Avenue and 6th Street, N.W. Washington, D.C. 20580	Bureau of Consumer Protection 202/962-2358
Environmental Protection Agency 401 M Street, S.W. Washington, D.C. 20460	Public Information 202/735-0890

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*For specific information consumers may be referred to other numbers.

BIBLIOGRAPHY EVALUATION CRITERIA

All teacher and student materials that were located were evaluated along two dimensions: *quality* and *relevance*. Quality was defined to include the following components:

- Provision of creative and detailed classroom activities or learning experiences that go beyond the one- or two-sentence "have the students do *x, y, z*" suggestions
- Development of decision-making skills that may be transferable to other safety issues
- Attention to affective educational approaches and objectives, not merely cognitive ones
- Emphasis on student initiative and involvement in classroom activities and in the planning of those activities
- A concern-centered approach that predicates learning on the assessment of student concerns and the development and use of classroom activities that initially deal with those concerns
- The provision of a lucid conceptual framework of transportation safety education by which teachers can grasp the field and the interrelationships of its components and by which teachers can develop additional activities and units of their own
- A modular, flexible approach that enables teachers to develop activities and units tailored to the needs of their particular students and community
- Provision of accurate factual information
- A nonmoralistic, noninjunctive approach
- Stress on the needs and problems of economically or geographically disadvantaged groups
- An interdisciplinary approach to transportation safety education

Few curriculum materials combined all these quality ingredients. Many included none or a few. In some borderline cases where a teaching material contained some quality ingredients, the authors made a subjective evaluation on whether the material contained *enough* of these elements to warrant referencing in the module.

To be considered relevant, a teaching material had to deal in a significant way with transportation safety from the point of view of or useful to the average citizen. Teaching materials were excluded from the module when their relevance was extremely limited or nonexistent because

- Only a small section of the material dealt with transportation safety issues. However, such materials were included when a subsection was of high caliber, dealt with an important aspect of transportation safety not covered elsewhere; or was part of an easily accessible and inexpensive unit
- The material was designed for a highly specialized audience
- The material was outdated
- The material contained information that applied primarily or significantly to a local situation
- The material was not distributed out of state

SPIRIT MASTER #1: FOR USE WITH ACTIVITY #13

FLEMING VS. RONDO--A HEARING

Below are five statements given in an automobile accident case--Fleming vs. Rondo. Ms. Fleming is suing Mr. Rondo for property damages. This complaint is being held before a hearing officer to determine if settlement can be reached out of court. Each person at the hearing is given the opportunity to tell his or her side of what happened in an attempt to arrive at a solution to the problem.

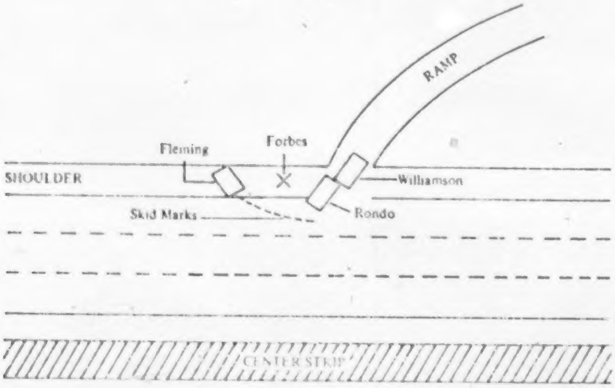
Hearing Officer: My name is Ms. Sussman. I am the hearing officer this afternoon. Present in the room is Ms. Fleming, who has brought a suit for property damages against Mr. Rondo. Others present are Officer O'Connor, who filled out the Police Accident Report in this case, and two witnesses, Mr. Forbes and Mr. Williamson.

I am here to listen to you all. Each person will be given a chance to make a statement. No one should interrupt the other. I am not here to judge either party; I am here to help you reach a resolution and keep the case from going to the courts, to save you time and money. Officer O'Connor, would you begin this hearing by making your statement?

Officer O'Connor: (Without emotion or inflection) I had come on duty the day of the accident at around 5:00. I hadn't been out on the road for more than 20 minutes when I got a call on my radio that there had been an accident on the highway near the Ocean View exit. Patrol cars in the area were to report there right away--traffic was all tied up.

Let me use this accident report diagram to show you what I found when I got to the scene. One car--this one here--was up against the guard rail, and two others were sitting in the road near the entrance ramp to the highway. The hitchhiker--who of course had moved from where he was standing at the time of the accident--was probably standing right about here in the road. Anyway, when I got to the scene, the cars were just like they are in the diagram. Several people were gathered around a woman who was sitting on the guard rail. I pulled my car over to the side and got out.

ACCIDENT REPORT DIAGRAM



I went over to the group of people and asked what had happened and if anyone was hurt. The woman's knee was bleeding, but other than that she and everyone else seemed all right. The woman's name was Sheila Fleming. She had been driving the car that was up against the guard rail. We measured her skid marks later--she had been driving between 45 and 50 mph at the time of the accident. The hitchhiker was a young kid named Jim Forbes--about 19 years old. The drivers of the other two cars were a Mr. Rondo and a Mr. Williamson. As far as we could find out, none of them had been involved in a serious accident before. That's about all I can tell you, madam. All three cars were pretty badly damaged, though.

SPIRIT MASTER #2: FOR USE WITH ACTIVITY #13

Hearing Officer: Thank you, Officer O'Connor. Mr. Forbes, would you give your statement now?

Mr. Forbes: (A little "spacey") Well, I was hitching a ride on Route 44. I'm afraid I really didn't see too much of the accident, because I wasn't paying much attention to the road. I tend to do a lot of daydreaming while I'm hitching rides--you have to, or you can go bats while you're standing there waiting for somebody to pick you up.

I didn't even see Ms. Fleming pulling over. The first thing I remember was hearing a horn blowing. I sort of "came to" then, just in time to see Ms. Fleming hit the guard rail right behind me, and the other two cars crashing into each other. My heart was beating a mile a minute. I'm just glad I'm still alive. I could have been hit, you know. In fact, I could have been hurt pretty badly.

Hearing Officer: Thank you, Mr. Forbes. Ms. Fleming, would you make your statement, please?

Ms. Fleming: (Trying to sound calm and firm) I was driving in the middle lane of Route 44. I wasn't too far away from Mr. Forbes--maybe a quarter of a mile, I'm not too sure exactly how far it was--when I noticed him standing near the entrance ramp hitching. He looked like a nice person, so I thought I would do him a favor and pick him up. I checked my rear view mirror and started to gradually change lanes so I could stop and give him a ride. There was *no one* behind me when I started to pull over. *I am sure of that.* I am a very careful driver--I have never had an accident in my life. Just as I got into the other lane, a horn started blaring from somewhere behind me and I heard a squeal of brakes. (Becoming somewhat emotional) It was then that I lost control of the car and hit the guard rail.

Hearing Officer: Mr. Rondo, may we now hear your side of the accident?

Mr. Rondo: (Somewhat definite) I was entering the highway by the entrance where Mr. Forbes was standing. I get on the highway by that ramp every evening of the week. I know it well. Every night, I go about it in just the same way. I come down the ramp, cautiously come out on the highway on the shoulder, then squeeze into the flow of traffic. That's the only way to do it--otherwise, you sit there forever, waiting until someone gives you a break. That night would have been like any other if that hitchhiker hadn't been there. I had to pull out into traffic--if I hadn't, I would have hit that kid. And that lady had to be pulling over just then, too--she should have looked before she started to pull over. I know that road--I've driven it a million times--and I know you can see all the traffic on the entrance ramp from where that lady was. She should have seen me. She should have waited to pull over. Dumb...woman...

Hearing Officer: Thank you, Mr. Rondo. And, Mr. Williamson, may we hear from you now?

Mr. Williamson: (Matter-of-factly) I was behind Mr. Rondo on the entrance ramp. Traffic was really heavy, so we were all moving pretty slowly and everybody was pretty close to everybody else. But it's always like that at rush hour. If you're a good driver, nobody has accidents--you just got to be able to handle yourself and your car. Anyway, Mr. Rondo was just about to move out on the highway --in fact, I think he had just started to speed up a little--I remember that, because I was thinking my car hadn't picked up like his since it was a week old. Nothing like a new car. (Pause) Well, anyway, I was just about to step on the accelerator when I heard this horn--I didn't even know it was that guy Rondo in front of me. I just slammed on my brakes and--whammo! What can I say?

SPIRIT MASTER #3: FOR USE WITH ACTIVITY #15

Questionnaire on Safety Belt Use

	True	*False*
1. Very few people will get into a serious automobile accident during their lives.	☐	☐
2. Accidents at slow speeds rarely involve serious injuries or deaths.	☐	☐
3. Most accidents causing injury or death occur at speeds of less than 40 miles per hour.	☐	☐
4. There is no clear evidence that safety belt use saves lives.	☐	☐
5. Even wearing safety belts, people in many serious accidents are still usually killed.	☐	☐
6. Although safety belts are usually a good idea, there are often times when people's lives are saved in car accidents because they were not wearing belts and were thrown free from a crashing, burning, or sinking car.	☐	☐
7. Shoulder belts add a great deal to the protection offered by lap belts.	☐	☐
8. Passengers in the rear seats of cars don't need to wear safety belts as much as people in front seats.	☐	☐
9. A frequent complaint people express who were in accidents while using safety belts is that they suffered bruises and soreness.	☐	☐
10. Safety belts sometimes prevent accidents because they can increase the driver's control over the car.	☐	☐
11. If people drive very carefully, they don't need to use safety belts because they can make sure they don't get into an accident.	☐	☐
12. Accidents always occur more often on city streets than on freeways or turnpikes.	☐	☐
13. Most Americans use safety belts most of the time.	☐	☐

SPIRIT MASTER #4: FOR USE WITH ACTIVITIES #3 & #17

Sample Class Quiz on Drinking and Driving

1. Which of the following *least* affects the amount of alcohol in the bloodstream? (a) Stomach content; (b) Weight; (c) Drinking experience; (d) Time elapsed.

2. Which of the following *best* describes the effects of alcohol on driver performance? (a) Blurs vision; (b) Reduces hearing ability; (c) Increases attention span; (d) reduces ability to react quickly.

3. When a nondrinking driver is compared with a drinking driver who has had three drinks, how much more likely is it that the drinking driver will become involved in a traffic accident? (a) No difference; (b) 10 times greater; (c) 25 times greater; (d) No one knows.

4. On the basis of present-day knowledge, the greatest single driver-related cause of fatal highway collision is: (a) Emotional upsets; (b) Inattention; (c) Fatigue; (d) Alcohol.

5. What percentage of fatal traffic accidents involve alcohol use? (a) 1 percent; (b) 10 percent; (c) 50 percent; (d) Nearly all; (e) No one knows.

6. Of all alcohol-related fatal car accidents: (a) Two-thirds involve problem drinkers; (b) Most involve social drinkers who had one too many; (c) One-half involve people who had only a little to drink; (d) No one knows what kind of drinkers are involved.

7. Every day in the United States, an average of approximately how many people are killed in car accidents in which alcohol was involved? (a) 3; (b) 10; (c) 75; (d) 200; (e) No one knows.

8. Police know that 2/3 of the alcohol-related traffic fatalities are caused by problem drinkers because of all of the following *except:* (a) Their very high blood alcohol levels; (b) Their previous record of offenses; (c) Their record of alcohol problems; (d) Their very high speed rate just before the accident.

9. The social drinker-driver is dangerous because: (a) Of sheer numbers; (b) They are not easy to spot and defend against; (c) They fail to recognize their limitations; (d) All of these reasons.

10. Problem drinkers who drive usually have: (a) Serious health problems; (b) Other personal problems; (c) Low intelligence; (d) A record as law-abiding citizens.

11. Which of the following is *most* affected by heavy drinking? (a) Brake reaction time; (b) Color perception; (c) The reasoning process; (d) Distance judgement.

12. Excessive drinking may have which of the following dangerous effects on a driver? (a) Overconfidence; (b) Risk-taking desires; (c) Decreased judgement; (d) Increased reation time; (e) Lack of concentration; (f) c and f; (g) c, f, and g; (h) All of the above.

13. Since we know that 2/3 of all alcohol-related traffic fatalities are associated with problem drinkers, (a) We should ignore social drinkers who drink and then drive; (b) Problem drinkers should be a major focus of efforts to reduce drinking-driving accidents; (c) Drivers should feel free to have a couple of drinks before driving; (d) All of the above.

14. Teenagers are more likely to have difficulty driving safely after drinking because of all of the following *except:* (a) Driving is a new and complicated skill for them; (b) They have had less experience with alcohol's effects; (c) They often weigh less than adults; (d) They spend more time driving than adults do.

SPIRIT MASTER #5: FOR USE WITH ACTIVITY #24

OBSERVATION SHEET*

Location:

Time of Day:

Traffic Conditions:

Description of Pedestrian Facilities: (e.g., crosswalks, lights, signs, overhead walks)--A map may be drawn if desired:

Characteristics Pedestrian Type	Young Child	Teenager	Adult	Elderly
Handicapped				
Male				
Female				
Crossed street correctly				
Ran				
Crossed other than at intersection or crosswalk				
Not paying attention				
Crossed against light				
Caught in middle of street				
Standing in street waiting to cross				
OTHER				

*Observation sheet may be filled with check marks, hatch marks.

SPIRIT MASTER #6: FOR USE WITH ACTIVITIES #5 & #26

You are the parent of a -year-old son and daughter. What rules, if any, regarding their walking and playing will you set? You may want to consider:

Safety Issue	Son	Daughter	Penalty for Disobeying
1. Playing in the street			
2. Walking or playing on or near railroad tracks			
3. Fooling around while walking			
4. Standing in street while waiting to cross street			
5. Not crossing at crosswalk or intersection			
6. Crossing the street against the light			
7. Running into street without stopping, looking, & listening			
8. Walking on right hand side of street when no sidewalk is available			
9. Not wearing relective clothing when walking after dark			
10. Not obeying safety patrol or police officer			
11. Other (Specify):			

SPIRIT MASTER #7: FOR USE WITH ACTIVITY #31

It was late on a summer afternoon, one of those sweltering days when heat rises from the pavements and nothing seems as pleasant as the prospect of getting away from the city and out into the country. Joe was riding along in his father's car, and in spite of the heat, he felt great. He had finished working at his summer job as a gas station attendant about half an hour earlier, and he had gotten paid. He had talked his mother into letting him use the family car to drive out to the lake and go for a swim with his friends. "Be careful," his mother had said. "Are you going to ask Carol to come along, too?" "Yes, I think I will." "Well, good, maybe you'll be careful for her sake, if not your own," his mother had said, and waved him on. She liked Carol, and knew that she was not the kind of girl who would spur Joe on to foolishness. "We won't expect you for dinner, but don't be home too late." "OK, we won't," he had agreed, but he didn't know whether his mother had heard him, since he was already half-way down the driveway.

When he arrived at Carol's house and proposed a drive and picnic and a swim at the lake, she quickly agreed. Her mother, too, urged them to be careful, but she liked to see the young folks have some fun, especially in this heat.

When they were in the car, Joe suggested that maybe they should take another couple along for company. And without much difficulty, they rounded up Bill and Joan, who quickly agreed.

Quite a bit of time elapsed before the four young people got to the lake, though. They had to buy some frankfurters, and charcoal and some soft drinks, and then it was forty minutes' drive to the lake. They started the charcoal in one of the outdoor stoves and all went for a swim. When they got out of the water, they were hungry and put their frankfurters on the grill. Joe opened the cans of soda, but when he offered one to Bill, he declined. "No, thanks, I've got something better." He reached into his picnic refrigerator and produced a can of beer. "Anybody care to join me?" Joan took one, but Bill hooted derisively when Joe and Carol turned down the offer. "What's the matter with you two? Don't you like any fun? Come on, we've got a long time yet before we have to go home, nobody will ever know the difference." "No, thanks, Bill," Joe said, "but I've got to do the driving going home and I don't want any beer right now."

Bill: "A little beer isn't going to hurt your driving. In fact, it'll probably relax you and help you."

Joe: "No, thanks, you go ahead, but I'll pass."

Bill: "Well, OK, but I'm going to do a little driving even though I've had a can of beer."

Joe: "Oh, no, you're not going to drive my car, especially after drinking. Sorry, but that's definite."

Bill: "Dummy, I'm not talking about a car. I'm talking about a boat. My uncle's motor boat is tied up here and he said I could use it any time. I've driven it before, and he trusts me with it, so much that he's given me a set of keys for it. Come on, you want to go right now?"

Joe: "Oh, I don't know, it doesn't seem too good an idea. What do you think, Carol?"

Carol: "I don't know, I don't think so. What do you think, Joan?"

Joan: "I don't know, I guess maybe it's OK."

Bill: "Come on, everybody keeps saying, 'I don't know.' This will be fun. It's got a big engine on it, over 100 horsepower, I think. That makes it safe, you know. We can get out of any trouble real fast. But I don't think we'll get into any. We'll just spin around a few times. What do you say?"

Joe: "Bill, you know Carol doesn't swim so good. Do you have any life jackets in that boat?"

Bill: "Who needs life jackets? This lake is just a puddle, you can practically walk from one end to the other. If Carol falls over, I'll jump in after her and get her before she knows she's even been in the water."

Joan: "Yea, who is driving the boat while you're doing that?"

Bill: "Come on, come on. All you people think of is reasons not to go. Why don't you think of reasons to go? We have a boat, it's hot, we can get a little high with beer and we can cool off riding around. Now, what could be better?"

Carol: "Yah, but..."

Bill: "No more yah-buts, let's go, gang..."

SPIRIT MASTER #9: FOR USE WITH ACTIVITY #46

ACCIDENT DATA SUMMARY

STATE	1970 - 1974 FIVE-YEAR SUMMARY OF SELECTED ACCIDENT DATA BY STATE														
	Total Number of Reported Accidents					Fatal Accidents					Fatalities				
	1970	1971	1972	1973	1974	1970	1971	1972	1973	1974	1970	1971	1972	1973	1974
Totals	3803	3909	3947	5322	5104	1132	1219	1152	1418	1170	1418	1582	1437	1754	1446
Alabama	63	91	109	111	117	40	37	47	36	40	45	46	53	41	50
Alaska	64	64	42	71	53	13	38	13	30	21	21	60	18	35	33
Arizona	48	51	57	109	92	10	7	10	8	12	13	12	12	8	17
Arkansas	24	15	29	53	25	18	11	21	38	16	24	13	27	45	20
California	556	566	555	696	648	82	101	89	99	95	116	138	115	128	125
Colorado	15	21	19	15	17	3	7	4	12	4	3	8	6	13	4
Connecticut	42	51	41	67	62	10	17	13	15	11	12	19	15	18	16
Delaware	8	5	11	13	20	5	3	5	7	2	7	4	6	9	2
District of Columbia	1	5	7	5	7	1	2	4	3	4	1	3	4	5	8
Florida	219	284	179	374	473	59	73	65	91	65	71	90	99	124	82
Georgia	35	48	30	72	84	24	19	16	33	28	29	28	19	36	34
Hawaii	36	15	37	27	63	1	2	7	1	5	1	2	9	1	5
Idaho	9	18	24	20	39	6	9	5	4	10	9	18	5	5	12
Illinois	77	80	82	127	78	27	31	36	51	29	31	33	45	69	43
Indiana	38	16	46	30	9	11	14	15	15	9	14	21	16	19	11
Iowa	30	42	35	54	61	8	11	6	16	15	8	15	7	16	18
Kansas	30	39	31	28	35	10	7	10	12	5	14	8	12	14	7
Kentucky	55	13	65	100	59	22	6	22	35	23	25	6	27	48	27
Louisiana	89	81	85	125	91	51	42	39	65	66	65	53	41	72	79
Maine	57	63	95	59	49	19	23	15	13	23	26	36	16	14	28
Maryland	127	145	149	196	188	29	38	30	41	37	35	50	34	44	47
Massachusetts	29	62	57	92	92	21	23	17	31	25	24	42	20	45	31
Michigan	217	191	194	392	320	66	67	63	79	58	79	77	72	94	69
Minnesota	74	76	83	107	97	34	32	25	32	36	38	37	34	35	42
Mississippi	23	41	33	45	39	16	30	20	19	14	18	40	27	26	18
Missouri	89	106	89	114	187	28	34	15	18	26	38	37	20	21	31
Montana	14	11	15	18	10	11	10	10	12	6	15	12	10	15	9
Nebraska	21	17	22	18	25	8	4	7	9	2	11	5	8	12	2
Nevada	32	53	66	87	52	3	8	7	4	2	4	11	7	5	2
New Hampshire	3	4	4	7	7	2	3	2	6	7	4	3	2	9	9
New Jersey	191	186	183	238	211	25	29	34	21	18	33	35	47	27	21
New Mexico	7	5	8	6	12	2	2	1	1		2	2	3	3	
New York	293	318	301	349	318	58	71	63	104	71	76	90	72	132	89
North Carolina	115	83	142	132	129	28	34	41	41	31	33	42	50	51	37
North Dakota	3	3	4	5	11	2		2	2	6	2		3	2	7
Ohio	84	97	97	145	138	31	21	26	54	34	34	35	35	73	36
Oklahoma	33	32	22	23	32	13	18	13	12	14	16	24	16	14	21
Oregon	68	68	60	83	146	27	23	17	15	30	35	31	23	17	33
Pennsylvania	71	80	86	86	79	25	28	40	26	25	33	31	46	32	28
Rhode Island	37	28	24	36	29	5	2	4	5	3	5	2	5	6	3
South Carolina	92	78	54	111	115	37	32	39	54	43	41	41	47	58	56
South Dakota	6	12	2	12	3		6	2	4	2		12	4	7	2
Tennessee	36	18	48	72	61	18	17	22	36	31	27	22	25	47	37
Texas	183	201	195	231	236	76	91	66	78	60	98	113	87	95	70
Utah	11	53	43	65	25		3	8	6	7		3	15	6	8
Vermont	3	1	3	8	2	3	1	7	8	2	6	1	9	13	2
Virginia	90	84	79	110	89	39	25	27	35	35	50	30	33	44	41
Washington	121	121	116	153	190	37	47	31	14	20	49	73	50	19	26
West Virginia	20	12	20	17	19	10	7	15	12	8	12	7	15	12	9
Wisconsin	152	122	127	166	112	49	46	44	43	27	56	53	50	52	32
Wyoming	28	23	24	36	39	6	4	8	10	7	6	4	9	15	7
Guam	5		2			3					3				
Puerto Rico	3	3	5	3	5		1	4	1			1	7	2	
Virgin Islands	6	5	1	3	4		2		1			3		1	
American Samoa[a]															

[a] American Samoa was not required to report boating accidents until 1973.

SPIRIT MASTER #10: FOR USE WITH ACTIVITY #46

ACCIDENT DATA BY STATE

1974	Number of Accidents				Number of Vessels Involved in Accidents				Number of Persons		Amount of Damage (Dollars)
	Total	Fatal	Nonfatal Injury	Property Damage Only	Total	Fatal	Nonfatal Injury	Property Damage Only	Killed	Injured Nonfatally	
Total:	5104	1170	679	3255	6449	1205	826	4418	1446	993	$9,181,500
Alabama	117	40	26	51	134	41	29	64	50	37	156,100
Alaska	53	21	3	29	58	21	3	34	33	5	119,000
Arizona	92	12	12	68	116	14	14	88	17	15	213,000
Arkansas	25	16	1	8	28	16	1	11	20	1	10,800
California	648	95	88	465	900	100	104	696	125	118	1,399,500
Colorado	17	4	3	10	21	5	4	12	4	4	15,600
Connecticut	62	11	8	43	97	11	12	74	16	15	75,200
Delaware	20	2	2	16	23	2	2	19	2	3	29,200
District of Columbia	7	4		3	7	4		3	8		17,100
Florida	473	65	63	345	575	67	73	435	82	95	1,775,300
Georgia	84	28	16	40	110	29	24	57	34	24	92,600
Hawaii	63	5	2	56	77	5	2	70	5	3	353,300
Idaho	39	10	6	23	52	10	7	35	12	7	35,900
Illinois	78	29	5	44	101	31	7	63	43	23	160,400
Indiana	9	9			10	10			11	5	
Iowa	61	15	12	34	75	16	14	45	18	21	88,200
Kansas	35	5	10	20	46	6	12	28	7	13	40,800
Kentucky	59	23	9	27	67	23	10	34	27	11	56,800
Louisiana	91	66	3	22	104	71	5	28	79	13	71,800
Maine	49	23	6	20	58	24	6	28	28	9	36,300
Maryland	188	37	20	131	244	37	23	184	47	27	406,300
Massachusetts	92	25	10	57	130	26	15	89	31	11	115,500
Michigan	320	58	45	217	396	58	46	292	69	62	348,700
Minnesota	97	36	20	41	135	38	30	67	42	26	68,300
Mississippi	39	14	9	16	49	14	14	21	18	9	58,300
Missouri	187	26	23	138	220	27	29	164	31	34	146,800
Montana	10	6	2	2	11	6	2	3	9	4	2,200
Nebraska	25	2	6	17	36	2	9	25	2	8	52,500
Nevada	52	2	5	45	59	2	6	51	2	7	95,200
New Hampshire	7	7			7	7			9		
New Jersey	211	18	25	168	268	18	31	219	21	31	433,900
New Mexico	12		2	10	16		3	13		3	13,000
New York	318	71	41	206	412	73	52	287	89	68	411,200
North Carolina	129	31	19	79	160	33	22	105	37	29	211,600
North Dakota	11	6		5	16	6		10	7		7,300
Ohio	138	34	8	96	170	35	9	126	36	14	180,000
Oklahoma	32	14	9	9	39	15	12	12	21	16	33,600
Oregon	146	30	25	91	162	30	28	104	33	33	206,200
Pennsylvania	79	25	16	38	98	25	18	55	28	23	71,300
Rhode Island	29	3	3	23	37	3	3	31	3	3	89,800
South Carolina	115	43	23	49	136	44	28	64	56	35	230,000
South Dakota	3	2		1	4	2		2	2		800
Tennessee	61	31	9	21	71	31	10	30	37	13	26,700
Texas	236	60	31	145	301	60	37	204	70	41	362,900
Utah	25	7	1	17	31	7	2	22	8	1	56,600
Vermont	2	2			2	2			2		
Virginia	89	35	9	45	110	36	13	61	41	12	115,900
Washington	190	20	14	156	244	20	17	207	26	20	495,100
West Virginia	19	8	2	9	22	8	2	12	9	2	24,700
Wisconsin	112	27	24	61	152	27	32	93	32	34	123,000
Wyoming	39	7	2	30	40	7	2	31	7	4	16,200
Guam											
Puerto Rico	5		1	4	6		2	4		1	3,900
Virgin Islands	4			4	6			6			27,100
American Samoa											

SPIRIT MASTER #11: FOR USE WITH ACTIVITY #46

Type of Casualty	RESULTS OF BOATING ACCIDENTS														
	Fatalities					Injuries					Amount of Damage (Dollars)				
	1970	1971	1972	1973	1974	1970	1971	1972	1973	1974	1970	1971	1972	1973	1974
Grounding	7	15	15	20	14	28	20	53	70	37	595,000	1,040,000	867,000	1,752,200	817,600
Capsizing	569	659	574	736	602	52	74	80	137	79	348,000	692,000	350,000	429,100	632,900
Flooding	128	82	81	48	38	7	8	13	11	14	419,000	323,000	355,000	264,300	406,700
Sinking	60	63	68	89	80	6	11	15	34	26	260,000	534,000	720,000	901,400	789,800
Fire or Explosion of Fuel	21	18	16	18	12	160	123	97	186	96	3,044,000	2,704,000	1,684,000	3,765,900	2,448,000
Other Fire or Explosion	5	2	4	4	5	11	4	5	27	7	965,000	1,767,000	315,000	869,100	647,700
Collision with Another Vessel	55	83	64	67	53	232	350	237	449	272	1,148,000	987,000	1,636,000	1,947,200	1,728,300
Collision with Fixed Object	62	61	55	65	73	99	120	107	238	165	686,000	568,000	410,000	1,021,400	1,034,600
Striking Floating Object	25	20	37	21	17	24	22	26	37	32	505,000	280,000	326,000	255,800	287,500
Other Casualty to Vessel	24	55	43	37	53	9	13	6	23	65	177,000	44,000	136,000	71,300	182,300
Falls Overboard	348	336	337	390	330	36	38	58	65	43	25,000	17,000	9,000	25,200	19,200
Falls Within Boat		1		9	10	9	10	3	34	26				11,600	6,500
Struck by Boat or Propeller	12	13	16	15	21	46	24	57	97	73		9,000		1,900	6,000
Other Personnel Casualties	102	174	127	175	138	61	79	72	171	58	6,000	57,000	99,000	60,200	93,900
Total	1418	1582	1437	1754	1446	760	897	629	1593	993	8,173,000	9,022,000	7,107,000	1,376,600	9,181,500

Type of Casualty	VESSELS INVOLVED IN ACCIDENTS																			
	Total					Fatal					Injury					Property Damage				
	1970	1971	1972	1973	1974	1970	1971	1972	1973	1974	1970	1971	1972	1973	1974	1970	1971	1972	1973	1974
Grounding	190	210	240	283	284	6	11	12	17	11	20	14	38	39	28	164	185	190	227	245
Capsizing	592	641	615	874	778	435	474	434	603	455	20	28	18	71	39	137	139	163	200	284
Flooding	220	173	152	149	154	94	64	62	35	30	3	4	5	8	9	123	105	85	106	115
Sinking	133	177	203	335	351	35	40	44	66	61	3	7	8	15	13	95	130	151	254	277
Fire or Explosion of Fuel	375	350	309	372	366	18	15	15	14	10	70	78	53	101	58	287	257	241	257	298
Other Fire or Explosion	73	77	48	105	85	4	2	4	3	4	6	2	4	20	3	63	73	40	82	78
Collision with Another Vessel	1915	2009	2261	2853	2845	57	87	97	100	80	284	373	270	537	307	1574	1544	1894	2216	2458
Collision with Fixed Object	411	415	338	599	573	51	53	46	66	62	64	91	56	132	112	296	271	234	407	399
Striking Floating Object	198	164	173	190	155	18	15	31	18	15	19	20	11	29	21	161	129	131	143	119
Other Casualty to Vessel	80	67	59	96	109	15	35	20	21	32	9	8	6	21	51	57	24	33	54	106
Falls Overboard	359	352	375	433	362	328	314	317	364	312	30	32	49	62	37	1	6	9	7	13
Falls Within Boat	9	10	3	36	39		1		5	10	9	8	3	30	24		1		1	5
Struck by Boat or Propeller	57	46	72	109	100	12	13	17	15	21	45	24	55	92	69		9		2	10
Other Personnel Casualty	150	224	196	304	168	85	133	98	145	102	61	63	69	147	55	4	28	29	12	11
Total	4762	4915	5044	6736	6449	1158	1257	1197	1466	1205	642	757	647	1304	826	2962	2901	3200	3968	4418

Type of Casualty	BOATING ACCIDENTS																			
	Total					Fatal					Injury					Property Damage				
	1970	1971	1972	1973	1974	1970	1971	1972	1973	1974	1970	1971	1972	1973	1974	1970	1971	1972	1973	1974
Grounding	190	209	240	283	284	6	11	12	17	11	20	14	38	39	28	164	184	190	227	245
Capsizing	591	639	613	874	778	434	474	432	603	455	20	28	16	71	39	137	137	163	200	284
Flooding	219	173	151	149	154	93	64	62	35	30	3	4	5	8	9	123	105	84	106	115
Sinking	132	174	200	335	351	35	39	44	66	61	3	7	8	15	13	94	128	148	254	277
Fire or Explosion of Fuel	339	337	293	370	366	18	15	15	14	10	70	78	53	101	56	251	244	225	255	298
Other Fire or Explosion	68	49	47	101	85	4	2	4	3	4	6	2	3	20	3	58	45	40	78	78
Collision with Another Vessel	1007	1051	1191	1444	1560	33	50	55	52	45	144	196	143	266	160	829	805	993	1126	1295
Collision with Fixed Object	408	415	337	599	573	51	53	46	60	62	64	92	58	132	112	293	271	233	407	399
Striking Floating Object	197	164	171	190	155	18	15	31	18	15	18	20	11	29	21	161	129	129	143	119
Other Casualty to Vessel	79	67	56	96	169	15	35	20	21	32	7	8	6	21	51	57	24	30	54	106
Falls Overboard	358	352	374	433	357	327	314	317	364	312	30	32	49	62	37	1	6	8	7	13
Falls Within Boat	9	10	3	36	39				5	10	9	8	3	30	24		1		1	5
Struck by Boat or Propeller	58	46	71	108	100	12	13	16	15	21	46	24	55	91	69		9		2	10
Other Personnel Casualty	148	223	195	304	168	85	133	98	145	102	59	62	68	147	55	4	28	29	12	11
Total	3803	3909	3942	5322	5104	1132	1219	1152	1418	1170	499	574	518	1032	679	2172	2116	2272	2872	3255

WEATHER AND WATER CONDITIONS			
1974	Total Vessels Involved	Fatalities	Injuries
Totals	6449	1446	993
Waters			
Oceans or Gulf of Mexico	504	111	45
Great Lakes	257	60	33
Tidal Waters	1702	240	207
Nontidal Waters	3986	1035	708
Water Conditions			
Calm	3423	467	630
Choppy	1549	250	216
Rough	547	196	63
Very Rough	339	138	31
Strong Current	299	104	24
Unknown	292	291	29
Weather			
Clear	4907	810	784
Cloudy	589	207	103
Fog	89	27	20
Rain	248	78	29
Snow	17	12	6
Hazy	127	24	20
Unknown	292	288	31
Wind			
None	1103	205	238
Light	2066	402	476
Moderate	1372	223	155
Strong	670	227	50
Storm	231	75	26
Unknown	407	311	48
Visibility			
Good	5120	854	789
Fair	577	153	98
Poor	431	137	75
Unknown	321	302	32